V. 18

THE OIL WEEKLY

MEMBER AUDIT BUREAU OF CIRCULATIONS

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IN THIS WEEK'S ISSUE

TRUE SAND IN EASTLAND

The first producer from a true sand in Eastland County was completed this week. Page 51.

ENGINEERING ASPECTS OF INDUSTRY

The engineering aspects of the oil industry is discussed by Earl W. Wagy, with Bureau of Mines, on pages 52 and 94.

BRITAIN AFTER OIL SUPPLY

Great Britain has become the partner of the Anglo-Persian Oil Company to engage in oil business in Australia. Page 53.

EXTEND BRECKENRIDGE FIELD

Breckenridge field is extended to the north and shows that the lime dips to north. Page 54.

DRILLING WELLS DECREASE

Drilling wells, in number, decreased in June in proven fields in Texas, but the number increased in unproven territory. Page 43.

INCREASED PRODUCTION

Federal Receiver Delano says that wells in Wichita County in receivership have increased ten per cent in production under his operations. Page 56.

HISTORY OF CRUDE PRICES

On pages 44 and 45 will be found a history of the changes in crude prices in the Mid-Continent during the past twelve years. Pages 44 and 45.

TAKING SAMPLES

John R. Suman discusses the taking of accurate samples of formations in drilling wells on pages 47 and 48.

OTHER FEATURES

	Pages
Blue Ridge	69
Barbers Hill	68
Batson	70
Breckenridge	34, 35
Bull Bayou, La.	66
Burkburnett	60, 61
Caddo Parish, La.	64
Claiborne Parish (Homer)	62
Damon Mound	69
Desdemona	58
Editorial	23
Electra	53
Goose Creek	68
Hull	69
Humble	71
Iowa Park	56
Kansas	33
Late News Flashes	25, 26
Market Reports	96
Oklahoma	32
Personals	34
Ranger	51
Refinery	84, 85
Saratoga	68
Sour Lake	71
Spindle Top	70
Southern Louisiana	70
Tampico	72
West Coast	74
West Columbia	71
Wildcats	86 to 90

WILDCATTING IN MEXICO

An era of wildcatting is on in Mexico to replenish the supply of crude petroleum. Page 72.

TRACING MOVEMENT OF WATER

The final chapter of the story dealing with the movement of water in oil wells is found on pages 76, 78 and 80.

BURK PRODUCTION OFF

Although a large number of small completions were reported for Burkburnett, the total daily average production is off. Page 60.

WILDCATS REPORT OIL

Seven wildcat wells in the Shreveport territory report production of oil or showings. Page 62.

STANDARD OF NEW JERSEY

The Standard Oil Company of New Jersey and affiliated companies refine about 49 per cent of the oil refined in the United States. Page 64. The head through error said produces when refined was meant.

BULL BAYOU EXTENDED

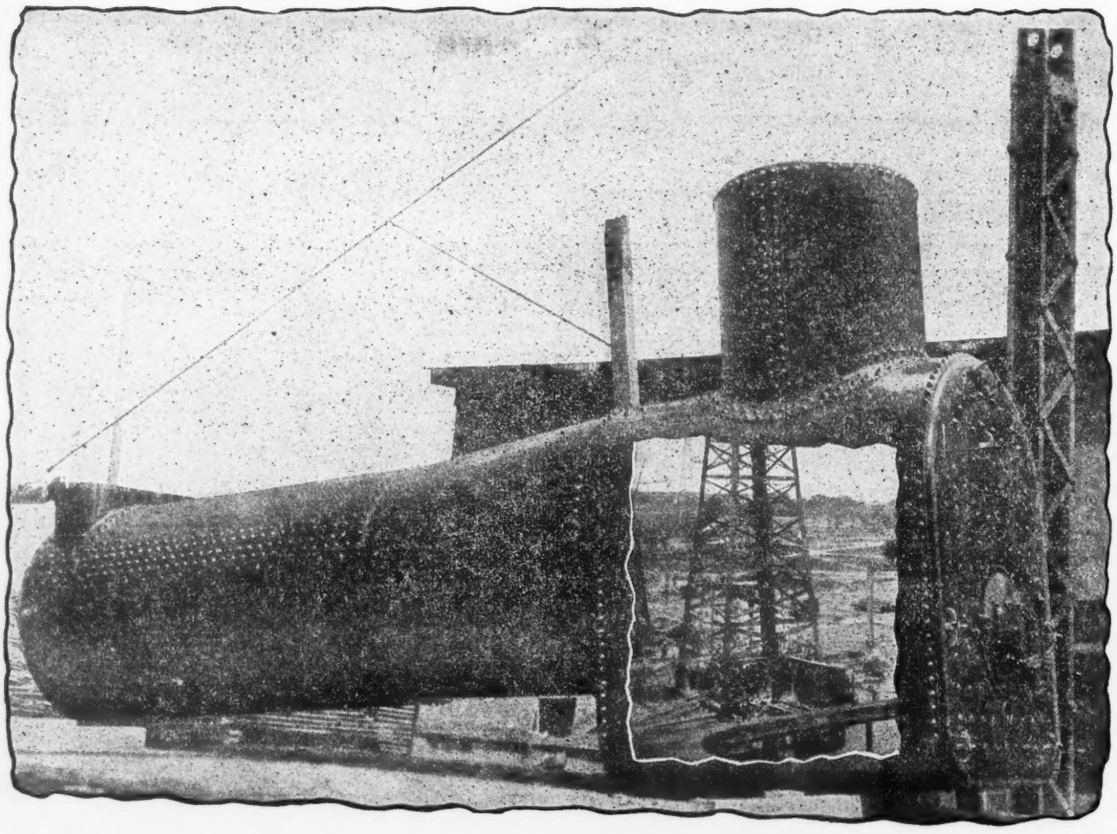
The Palmer Trust Co. well is making about 800 barrels and extends Bull Bayou field. Page 66.

MID-CONTINENT PRODUCTION

June production in the Mid-Continent shows an increase in daily output, but a decrease for the month, when compared with May. Pages 36 to 40.

WILBARGER COUNTY

Three widely separated wells in Wilbarger County report showing of oil. Page 56.



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THE OIL WEEKLY

HOUSTON DALLAS

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MEMBER AUDIT BUREAU OF CIRCULATIONS

VOL. XVIII—NO. 1

Need for Increased Production

THE petroleum industry of the country sees the absolute necessity for increased production of petroleum, and practically every man engaged in this great business is putting forth his best thought in an effort to find the best plan to solve the problem, if it can be solved. A representative of The OIL WEEKLY this week asked one of the leading oil men in the state what, in his opinion, was the greatset problem now facing the petroleum industry, and he answered "increased production."

He did not hesitate, as, in his opinion, there was no other answer to the question. No other problem is of sufficient importance to be given a thought in connection with the greatest problem of them all. He did not offer a solution. The question is too big to be discussed in a haphazard manner. But he did say his company is pumping a number of wells where the production hardly sells for sufficient money to pay the expense incident to the pumping. But his company continues to pump these wells in an effort to increase production.

The Bureau of Mines, Department of the Interior, has placed some of its best men at the disposal of the oil industry in an effort to assist in solving the problem. It has been said that there is something like a ten per cent loss in the handling of crude through evaporation. This matter was brought to the attention of several of the larger petroleum interests and the matter has been given careful study by experts from the Bureau of Mines.

In the next few weeks The OIL WEEKLY expects to begin publication of a series of articles dealing with this question of evaporation with an idea in view of trying to conserve this estimated ten per cent loss. The OIL WEEKLY would like to print the experiences of a number of production superintendents in increasing production of old wells by cleaning and other methods. It feels that such articles would be a help to the industry as a whole and assist greatly to increase production.

There have been hundreds of instances in Texas and Oklahoma where old wells have been worked over, cleaned out, readjustments made in the pumping machinery, etc., to the end that the daily production of these old wells have been considerably increased. Maybe this has not been practiced in every field of the country. Sometimes it requires much study to decide what is necessary to be done to a well to make it do its best. The same system will not work at every well. An oil well has some of the attributes of a man. Each one has his own peculiarity, and you can usually get the best out of each one if you will handle it or him right.

One field superintendent was told once by his boss that the superintendent would be due greater praise for adding to the daily production of an old well than he would be due if he completed a new well. It costs so little to increase the production of an old well, especially when the cost is compared with the drilling of a new well.

The North Texas fields are producing in round numbers about 100,000 barrels a day. Should all of these wells be worked on and made to increase 10 per cent, this would mean an increase of 10,000 barrels a day, or oil worth $35,000. The effort is certainly worth trying, and in most fields is being done.

The wildcat driller should not be forgotten, and he should be given the active co-operation of all other oil men and the public in general. This does not mean that the public should invest in every company being organized, but that an investment in a real oil concern organized for the sole purpose of engaging in the oil business and producing crude petroleum is a good venture, provided the men at the head of the company are dependable and seasoned oil men. So many companies have been organized with the sole purpose of getting the organization fees, that many honest companies are reaping hardships.

The boom is off at various points in Texas where good oil fields have been developed, but a glance at the statistics on pages 36 to 39 of this issue will show that the average daily production of the fields of the Mid-Continent for June is an increase when compared with the figures for May. This is the result, regardless of the lesser number of completions and smaller total initial production.

The best minds engaged in the petroleum industry feel that the demand for petroleum products will be met, but they are at the same time convinced that sensible conservation rules must be followed and that every drop of oil possible must come from the wells now producing. They want no fool rules for their guidance, but they are ready at all times to co-operate with any and all agencies to increase the production of oil to meet the growing demands of this country as well as the rest of the world.

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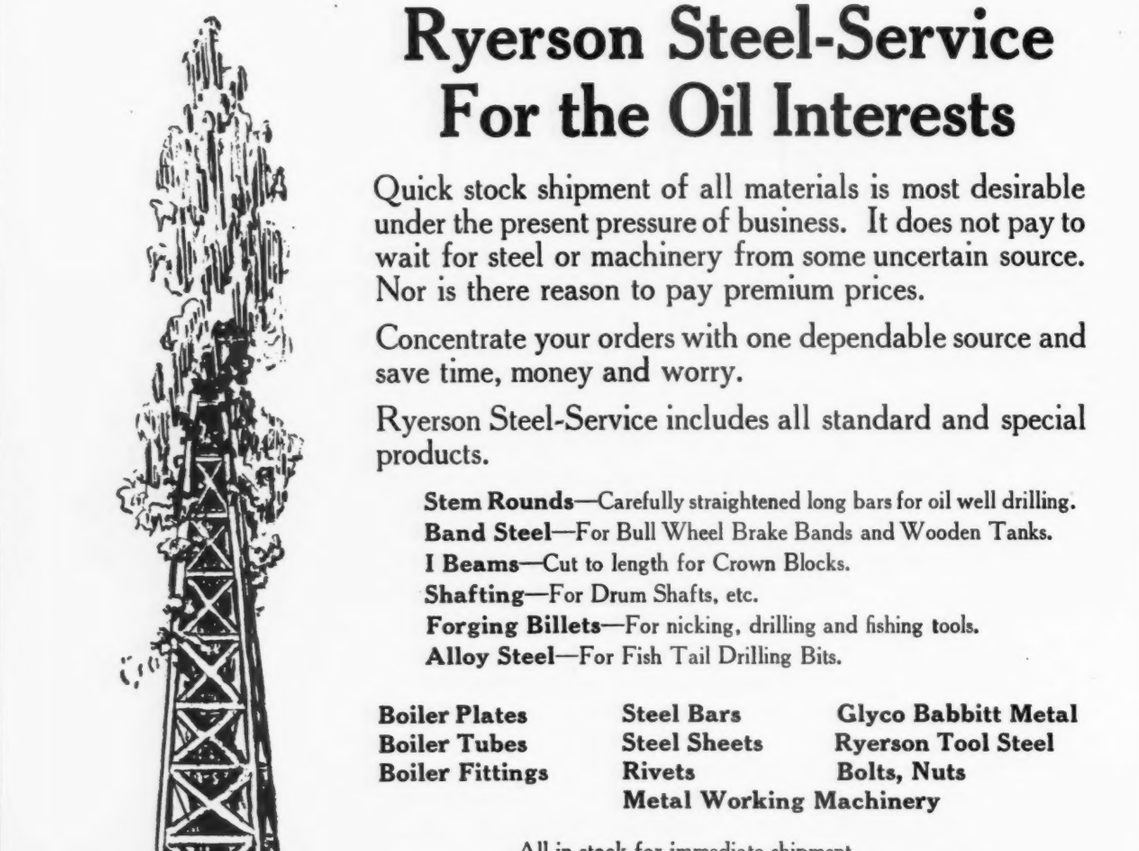


FUEL OIL UP ON WEST COAST

Los Angeles, Calif., July 1.—Effective today the Union Oil Company of California and General Petroleum Corporation advanced their fuel oil price at Los Angeles and San Francisco Bay points to $2 per barrel an increase of 15 cents and at Columbia River and Puget Sound points to $2.35, an increase of 10 cents. Action was taken with reference to Standard's quotation.

GOOD WELL AT GOOSE CREEK

Humble Oil & Refining Co.'s No. 3 Jones Stateland at Goose Creek was completed on Wednesday with an initial flow by heads of 1200 barrels of pipe line oil.

SHOWING IN BURLESON COUNTY

J. P. Vaughan of the Federal Production Company writes from Caldwell, Texas, that the company's No. 1 A. Giesenschlag at Mound Prairie, Burleson County, drilled into about 12 feet of shale formation at 225 feet which showed some oil and gas. The well is now drilling below 325 feet in a gumbo.

SERVICE TO MEXICO

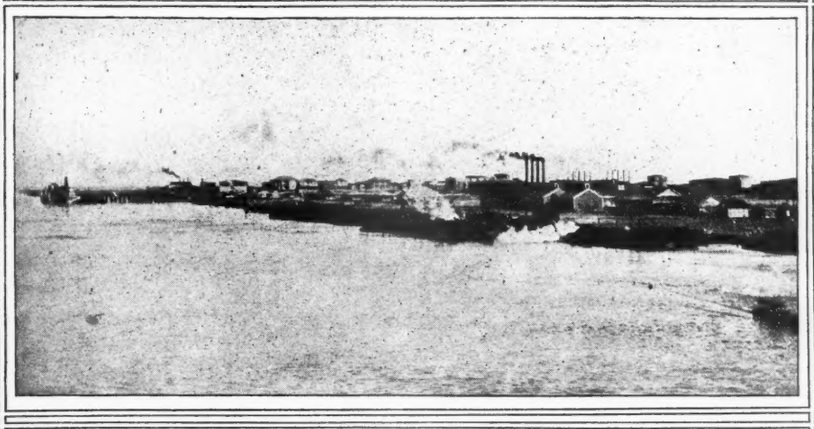
The Houston Chamber of Commerce announces that the Compania Haviera Mexicano has inaugurated a steamer service for passengers and freight between Galveston and Mexican ports. The steamers will accomodate about 40 passengers.

RIVALS GREAT BRITAIN IN OIL

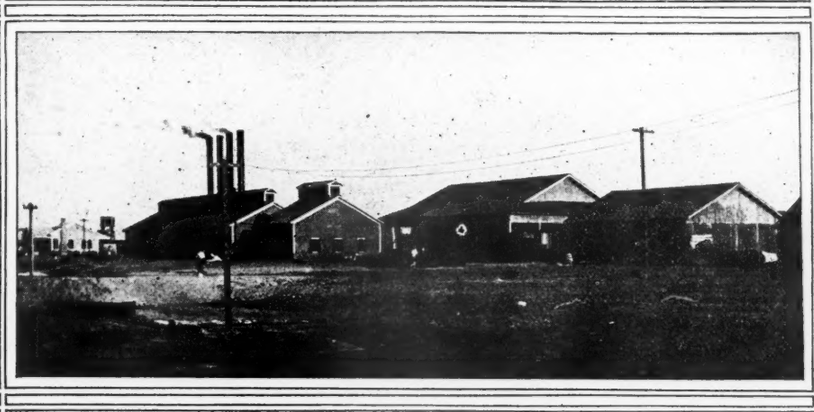
The comparative standing of Great Britain and the United States in the oil industry was put into an interesting light here by F. W. Le Porin, Security Sales Manager for Henry L. Doherty & Co., in commenting on the recent statement of Sir James Cadman, advisor to the British Government on oil questions, that Great Britain produces 4½ per cent of the world's entire oil output. Mr. Le Porin pointed out that a single American company alone, the Cities Service Company, through its subsidiaries, produces as large a share of the world's total as the entire British output, which as figured by the English authority included oil obtained from sources under control of Great Britain or British interests in foreign countries, including the oil from the wells in Persia.

Mr. Le Porin returned a few days ago from a trip of investigation which covered Great Britain, France, Belgium, Norway, Sweden, Germany and other European countries, and came into intimate contact with bankers and financial men conversant with the European financial and industrial situation, particularly as affecting oil securities and the market for oil.

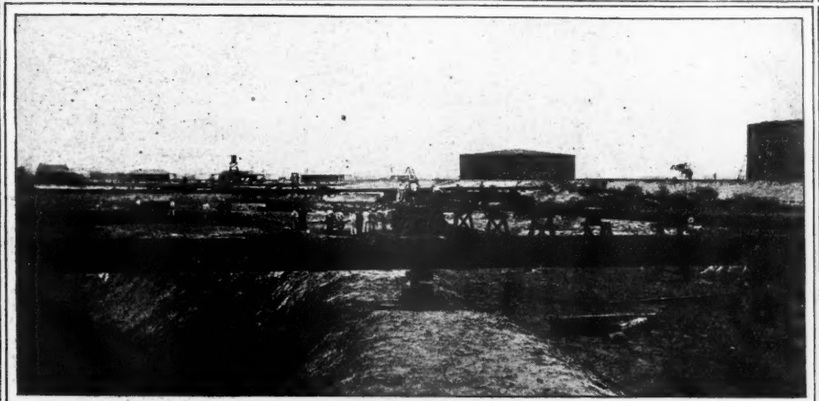
"There is at present very keen interest in oil securities in Europe, whether it be in England, Holland, Belgium or France," said Mr. De Porin. "It is the one thing in which there is the wildest speculation, restrained, of course, by the stringent government regulations which are the rule over there. In the substantial London papers, as for instance, the Times, the Mail or the Express, all the financial news now seems to run toward what oil is doing. It may be worthy of note in this connection, as showing the favor in which American oil securities are held in Europe, that whereas about 80 per cent of the total amount of American securities held by Europeans before the war was sold by their holders, this was not true in anything like the same proportion of securities of the Cities Service Company."



One view of Sinclair terminal near Tampico at the mouth of the river, with the Standard Oil Company's refinery in the background



The Vinas terminal is now capable of loading tank ships at the rate of about 8000 barrels an hour, without interfering with the simultaneous unloading of barges



Another view of Vinas terminal suggesting the improvements made in anticipation of present increased shipments

—Cuts used through courtesy of Sinclair's Magazine

Refined Products Market Strong Along All Lines Last Week

THE refined products market was strong along all lines during the past week, except possibly fuel oil, and the market was spotted on that. Despite a drop of a cent in the tank wagon price of kerosene by the Magnolia Petroleum Company in Texas territory, which drop was made to lessen the difference which had previously existed between the tank car and tank wagon prices, the kerosene market toward the close of the week was strong.

While a number of Southwestern refineries have considerable stocks on hand, the cause for this stocking up is given by some as a preference to store it and wait for a climbing market rather than to unload at the present time.

The opinion expressed in The OIL WEEKLY two weeks ago that the gasoline market on new navy gasoline was weak has met with some opposition on the part of refiners who assert that on the contrary a strengthening of the market is on. The situation in California and in one or two states east of the Rockies is said to be acute, and while the situation is to some extent local, it has an effect on the general market feeling.

Refiners in the Wichita Falls district are now paying premiums ranging from 40 cents to 50 cents at the refinery and 25 to 35 cents at the well.

"We sold some new navy at 24 cents during the past week, and quite a bit has been sold during the past few days at 23¾ cents," said one North Texas refiner. "The only possible weakness we have seen was but a temporary matter, caused by a flooding of stocks which in turn was caused by the embargo. Now that the embargo has been lifted and these stocks are clearing out, that weakness is passing."

The cut in the tank wagon price of kerosene by the Magnolia did not affect the general situation as regards tank car prices. The demand for kerosene is good and rumors of large export contracts about to be made on kerosene is having a tendency to strengthen the market.

Fuel oil for delivery at North Texas points was quoted at $2.80 to $3, and weak. But if a seller cares to ship to the Eatsern market the demand is better.

The lube market is strong and growing still stronger. This observation was made in these columns last week. Heavy oils are becoming more scarce. The increased strength is partially seasonable and partially due to a shortage of lubricating stocks.

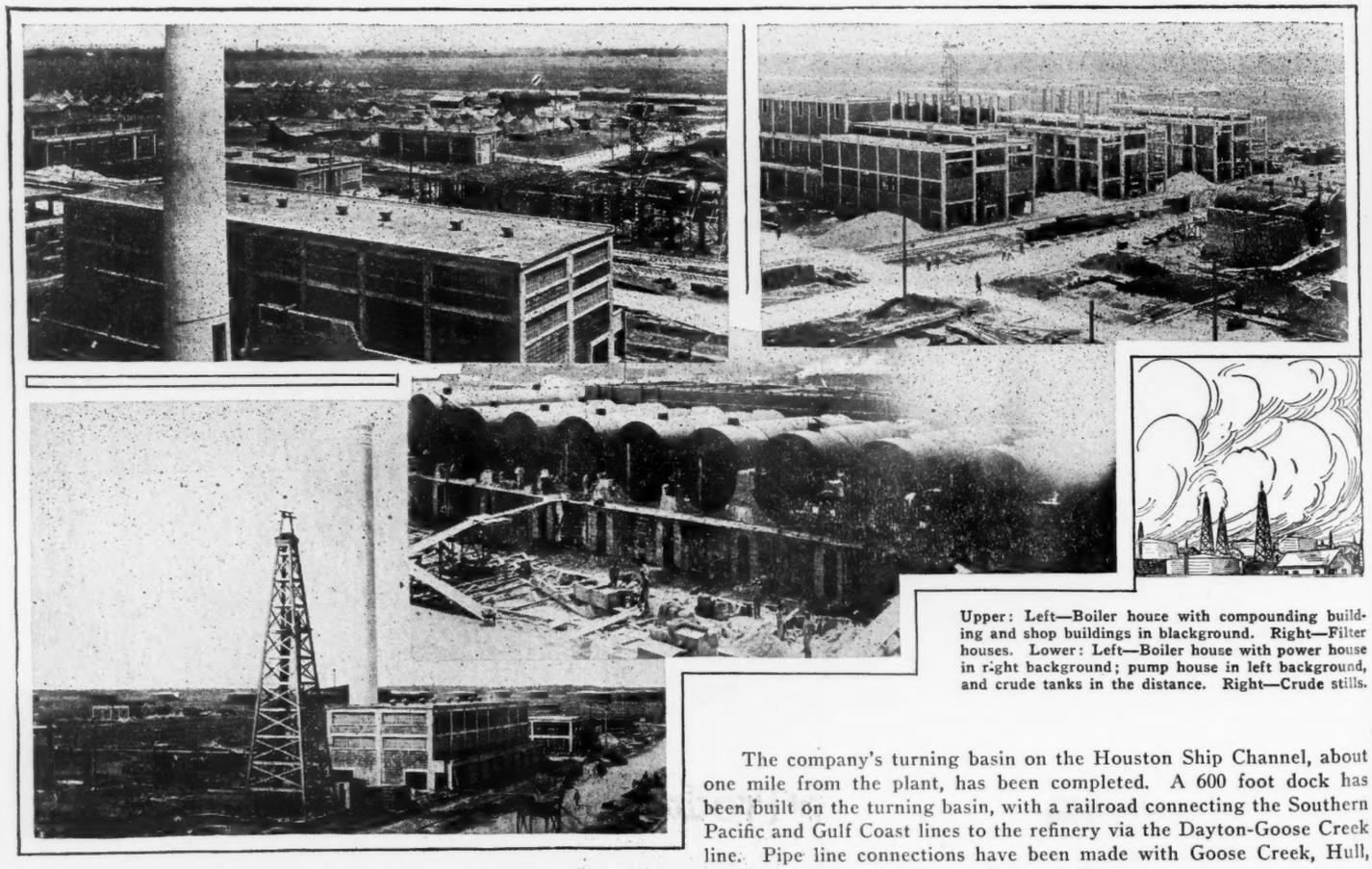
A decrease in the production of the heavy oil district of the Gulf Coast for the week of June 26, as compared with the week of May 26, is no doubt having some effect on the lube market. A decrease of 11,000 barrels a day is seen on comparison of the production of the two periods.

The total production of the Mid-Continent, Louisiana, North and West Texas and the Gulf Coast during the week of June 26 was 745,609 as compared with 734,869 barrels for the week ending one month previous, showing a gain of approximately 11,000 barrels a day.

Gains were made in every general district except the Gulf Coast, where a loss of 11,000 barrels was made.

Following are the prevailing prices on kerosene and gasoline in the Southwestern district this week, in gallons—tank wagon and service station quotations:

	Kerosene	Gasoline	
Texas Points:	T.W.	T.W.	S.Sta.
Dallas	20	29	31
Fort Worth	20	29	31
San Antonio	20	29	31
Amarillo	21	30	32
Houston	20	29	31
Oklahoma Points:			
Oklahoma City	18	28	30
Tulsa	19	27	29
Woodward	20	29	31
Muskogee	20	29	31
Arkansas Points:			
Little Rock	21	29	31
Pine Bluff	21	29	31
Fort Smith	20	28	30



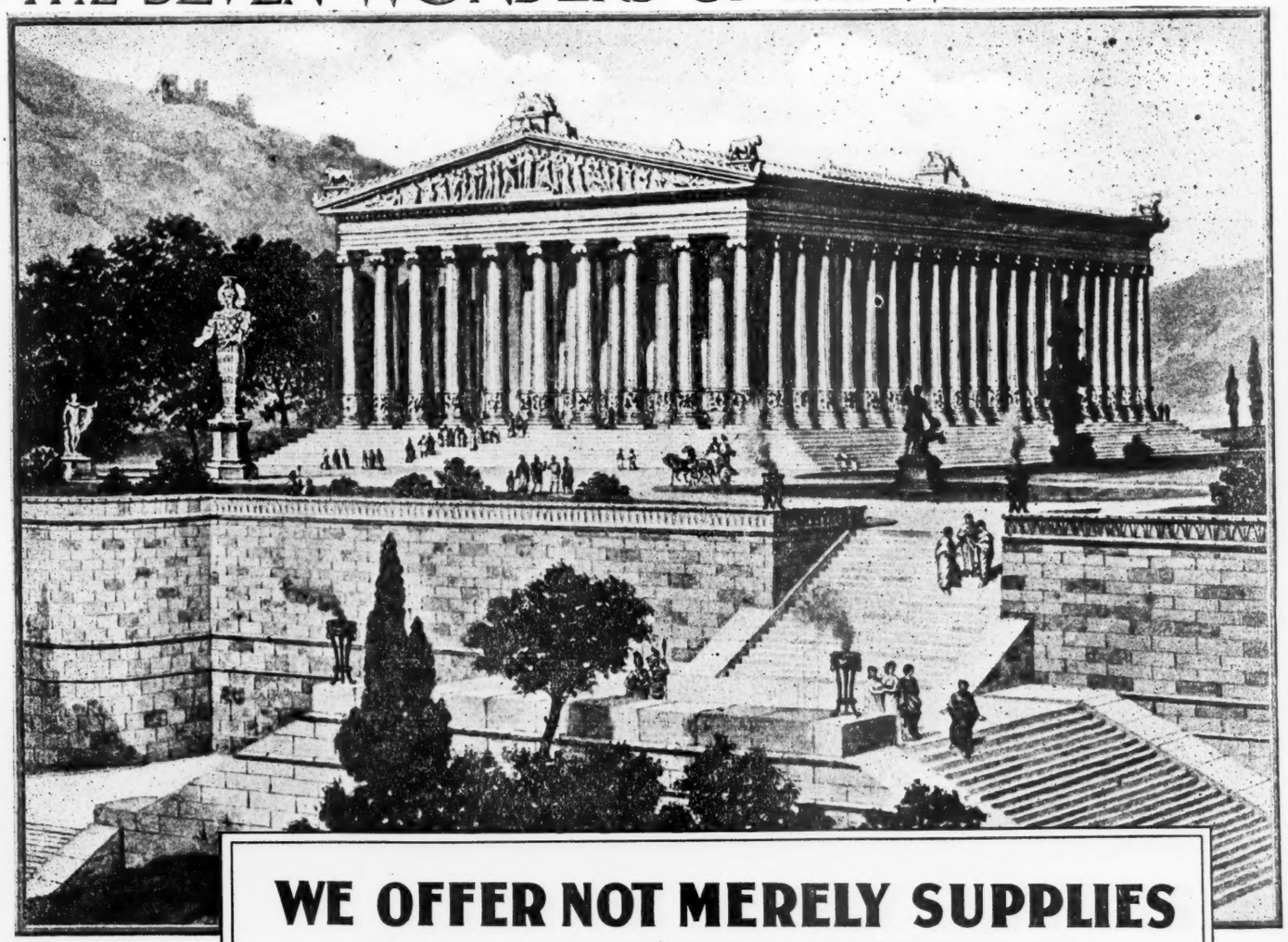
Upper: Left—Boiler house with compounding building and shop buildings in blackground. Right—Filter houses. Lower: Left—Boiler house with power house in right background; pump house in left background, and crude tanks in the distance. Right—Crude stills.

The Humble Oil & Refining Company's new refinery at Baytown, on the Houston Ship Channel, had seven stills in operation and a daily capacity of 5000 barrels on July 1. It is expected that a refining capacity of 12,000 barrels or more daily will be attained this year. It is understood that this refinery when completed will be the second largest in the United States.

The company's turning basin on the Houston Ship Channel, about one mile from the plant, has been completed. A 600 foot dock has been built on the turning basin, with a railroad connecting the Southern Pacific and Gulf Coast lines to the refinery via the Dayton-Goose Creek line. Pipe line connections have been made with Goose Creek, Hull, West Columbia and a Ranger line with Webster.

The company owns 1600 acres of land, 150 acres of which are occupied by the townsite, nearly 400 acres by the plant and the remainder to be used for crude oil storage and extension. When completed the refinery will have more than 40 stills, including crude stills, steam stills, filter stills, filter wash stills and pressure stills.

THE SEVEN WONDERS of THE WORLD · · 2



THE TEMPLE OF DIANA AT EPHESUS was one of the largest and most beautiful structures of ancient times. Its columns measured 60 feet in height. The most famous of Greek sculptors Phideas, was among its builders

WE OFFER NOT MERELY SUPPLIES BUT SUPPLY SERVICE

Too many supply companies, in the past, have been mere brokers of supplies, striving to please their customers but lacking carefully worked out service policies.

This should be changed—for the industry, if it is to meet the demands for increased production, needs highly intelligent and far-sighted supply SERVICE.

Actuated by this thought, we have striven for several years towards an ideal. We visualized a house which should study in the field the real needs of the industry, should then investigate all lines and handle only the best for oil field use, should maintain complete stocks, and should develop an especially trained and highly resourceful service organization.

Our patrons have appreciated this new type of service. Our business has quadrupled in a few years' time. We believe that you, too, would find this service an asset.

The Producers Supply & Tool Co
Oil & Gas Well Supplies

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WICHITA FALLS, TEXAS — TULSA, OKLA. — ST. MARY'S, W. VA.

Acreage Limit Rule on Indian Lands in Oklahoma Is Abrogated

THE 4800 acre limit on restricted Indian lands in Oklahoma oil producing territory has been abrogated, except in the Osage Nation, and among the western tribes, by the Department of the Interior. The abrogation applies to all the restricted lands of the five civilized tribes, which at one time embraced the greater part of the old Indian Territory—now eastern Oklahoma.

The abrogation of the rule has been sought by Oklahoma oil companies for some time, and the Mid-Continent Oil and Gas Association was to have a hearing before the Department of the Interior on July 15, to urge the abrogation of the rule on all Indian lands in the state.

The announcement of the action of the Interior Department in abrogating the rule on the lands of the five civilized tribes does not indicate whether it will consider abrogation of the rule on the Osage lands, and for the western tribes, or not, and the Mid-Continent Oil and Gas Association is pressing its claims for a hearing on July 15, to urge the department to extend its new ruling to all restricted Indian lands.

The so-called 4800 acre limit was made by act of Congress when it allocated certain lands to the Indian tribes in Oklahoma in 1904, and was designed to prevent any one company or combination of companies getting a monopoly of the oil and mineral lands in the possession of the Indians.

At the time of the allotment of the lands, provision was made against its alienation by the Indians, and they were forbidden to sell it, or encumber it in any way, except with the permission of the Department of the Interior. Such lands were "restricted," and could only be leased for oil or gas development under the supervision of the government—and only 4800 acres to any one company.

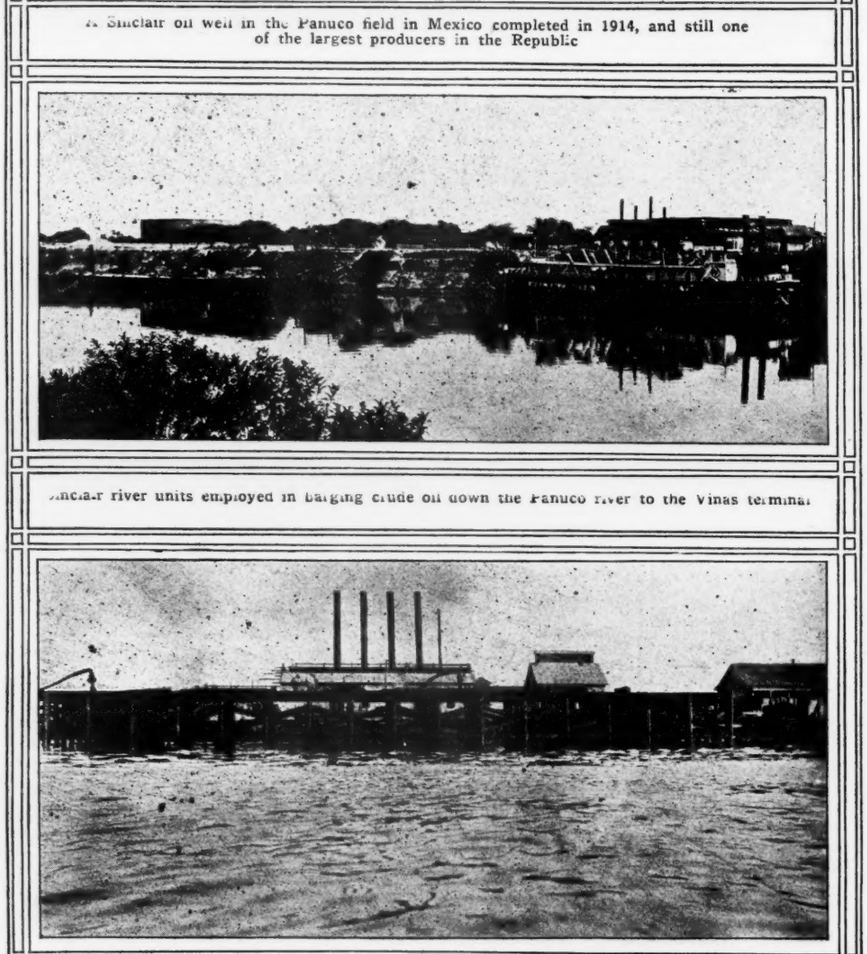
It was provided, however, that as each Indian allottee became competent, and established proof of his competency to handle his own business affairs, the restrictions imposed by the government would be removed from his lands. Under this provision about 85 per cent of the Indian lands of the five civilized tribes have passed into the management of the Indian owners of said lands, and only about 15 per cent yet remains restricted.

The new ruling therefore affects only about 15 per cent of oil-bearing Indian lands of Oklahoma.

The Osage fields, not affected so far by an abrogation of the 4800 acre rule, are said to be about one-third developed. The Osage Indians themselves, through their tribal council, are petitioning Congress to extend the period of oil and gas leases on Osage lands another 25 years, as the original leases were made for 25 years, and are due to expire in 1931. Osage Indians get one-sixth royalty on all oil and gas produced, and are said to be the richest people, per capita, in the world.

The 4800 acre limit, originally made to prevent a monopoly, has outlived its period of usefulness, according to oil men, as the degree of competition now existing in the production of oil would eliminate the possibility of a monopoly by any one company. It works a hardship on the small producer, making it impossible for him to dispose of his properties to the larger companies, which may in turn already have their full quota of 4800 acres.

Mowry Bates and Bernard H. Lasky will remove their offices from 503 South Boulder, Tulsa, Okla., to Acto Building, Tulsa, upon its completion July 1, where they will continue their business as consulting petroleum engineers.



A Sinclair oil well in the Panuco field in Mexico completed in 1914, and still one of the largest producers in the Republic

Sinclair river units employed in barging crude oil down the Panuco river to the Vinas terminal

Partial view of dock at the Sinclair company's Vinas terminal at the mouth of the Panuco river

—Cuts used through courtesy of Sinclair's Magazine

HUERTA ADOPTS NEUTRAL STAND

According to an Associated Press dispatch article from Mexico City, Provisional President Adolfo de la Huerta will not interfere in negotiations between oil men and General Jacinto Trevino, secretary of commerce and industry, he declared yesterday.

A delegation of representatives of foreign oil companies interviewed the president, seeking to obtain from him some modification of General Trevino's adverse rulings on Tuesday, but Senor de la Huerta replied that his secretaries had ample power and that he would not interfere with their lawful decisions.

"Oiling the Railways"

The accompanying article, covering one of the greatest uses of petroleum oil is reproduced through the courtesy of Sinclair's Magazine.—Editor

AMERICAN railway investments, amounting to billions of dollars, their security on petroleum are in large part dependent for

Railways, as now understood, date back for more than a century; petroleum as an industry, dates back for sixty years. In fact, when Colonel Drake's well was "brought in" in 1859, there were about 30,000 miles of railroad lines in the United States. Nevertheless, the statement just made need not be modified.

The real progress of the railroad industry came after that date, and, in more than one respect, this progress was intimately associated with that of the petroleum industry.

Mechanical contrivances of whatever sort need lubrication. Petroleum has not been the sole source of lubricants for railways; but as the railway lines were extended, as equipment was improved, and as the volume of traffic increased, it was found that petroleum lubricants were the only ones which would give the required service and which could be had in adequate quantities.

That condition exists today.

The time may come when substitutes may be found which will make petroleum lubricants less essential, but there is no immediate prospect of such development.

The railways, as now constituted, could not be operated without petroleum lubricants. A few railways could be operated, it is true, but so few as to leave the country practically without railway transportation. In fact it is no exaggeration to say that petroleum lubricants are as essential today as steel rails.

Animal and vegetable oils, the predecessors of petroleum products in this field, have given way entirely, not altogether on account of their scarcity, but partly because the substituted products of petroleum answer the purpose far better, are less affected by temperature and other influences, are more dependable uniform, and have fewer, if any, disagreeable characteristics.

While animal and vegetable oils were supplanted, no other competitor of petroleum appeared, if one excepts the small quantity of other oils sometimes compounded for use in cylinders.

In modern rail lubrication, two mineral products are sometimes brought to the aid of petroleum, namely, graphite and mica, and in combination with petroleum they have proved to be valuable, but by themselves, under present operating conditions, are not satisfactory lubricants.

This lubrication phase of the question is perhaps of greatest basic importance, but it may be well to remember also that the machinery itself—the modern locomotive with its tremendous tractive power, steel cars which dwarf the old type box cars in service value, and the Pullman coach which offers maximum security and comfort to its passengers—all of these things, and the very plants in which they are built, have been so interwoven in their development with the petroleum industry as to be regarded as "co-products" of the efficiency which petroleum typifies.

The use of petroleum products in railway operation does not stop with lubrication. These products enter, for instance, into the manufacture of paints, particularly of the darker colors applied to freight equipment, locomotives, and buildings along the right-of-way. Steel freight cars of today are painted largely with asphaltum paints, while the lighter products of petroleum are used to dilute and dry other grades of paint.

The saturant of the felt roofings used by railroad companies on freight cars, stations, shops and other buildings, is a petroleum product for which there appears to be no substitute of equal quality, although coal tar products are sometimes used in the manufacture of certain grades of roofing.

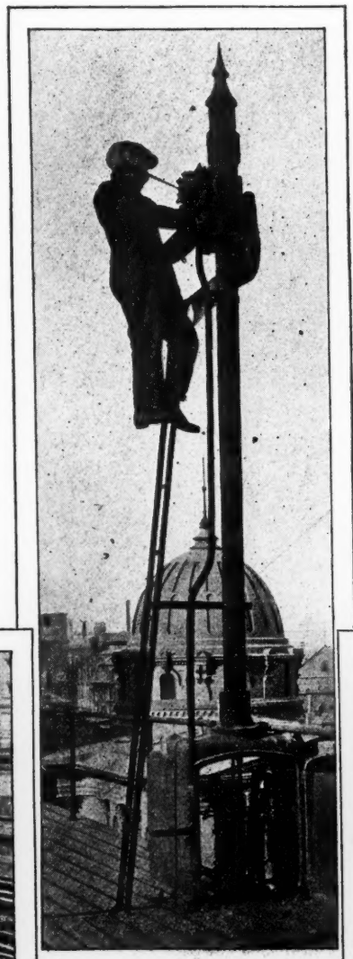
Refrigerator cars, which are used in such large numbers by all American railways in transporting perishable goods, are also dependent for their insulation on the use of felt and building papers which have been treated and waterproofed with petroleum products. The miscellaneous uses of petroleum are numerous, and all have added to the efficiency of rail transportation.

The greatest use of petroleum products in railway operation, so far as quantity is concerned, is in the generation of power for locomotives and for steam plants. The railways of this country consumed last year approximately 50,000,000 barrels of fuel oil. This is the estimate of the United States Railroad Administration, and represents an increase of more than 150 per cent in ten years. In 1909, the annual consumption was less than 20,000,000 barrels.

The history of the use of fuel oil in railway locomotives is particularly interesting at a time when the advantages of fuel oil are so generally recognized. Locomotives were fired with crude petroleum in Russia during the seventies, and although this oil was poured directly from the "springs" into the tenders, no accidents occurred so far as the records show.

In the Caucasian region, fuel oil could be had for nothing. It was considered refuse, and as wood was comparatively scarce, and coal practically unobtainable, petroleum was naturally employed.

In the United States, there was much prejudice against any attempt to employ fuel oil for such purposes, it being contended that the danger involved would be inexcusable. Tests were made and it was determined that were it not for this "very great and unquestioned element of danger," petroleum might be used without difficulty, "and perhaps with some element of superiority over other kinds of fuel."



Oiling signal equipment 30 feet above Pennsylvania tracks in Philadelphia.

Oiling lock and switch movement

Cylinder and switch valves being oiled

Signal devices have become an essential part of railway systems, and they must be kept in perfect working order at all times.

fuel oil, but to provide an adequate supply of fuel oil to consumers.

The advantages of fuel oil have been so thoroughly demonstrated and are now so widely appreciated, that there should be no doubt as to the continued growth of fuel oil consumption—assuming, of course, a continued ample supply.

So far as the railways are concerned, it might be pointed out that both coal and oil for use in railway locomotives may eventually be discarded, and that the railway systems will be electrified throughout. No change of this sort takes place suddenly. There is reason to believe that electricity will be used more and

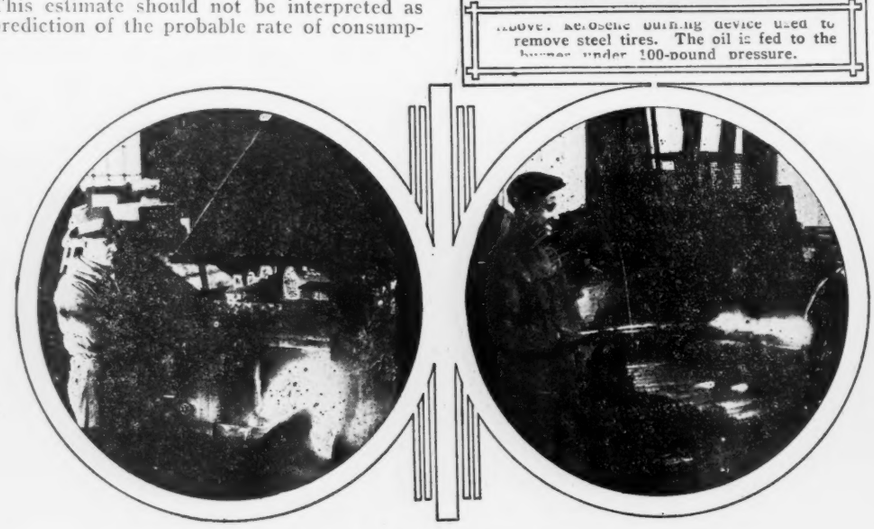
Above: Kerosene burning device used to remove steel tires. The oil is fed to the burner under 100-pound pressure.

Such was the prevailing sentiment forty years ago.

Today the use of fuel oil for power purposes in railway operation is increasing constantly, not only in the United States, but in practically every other country where fuel oil is obtainable, and there is every likelihood that this increase will continue so long as the supplies of fuel oil are adequate and the price is such as to give a relatively high service return when compared with cost.

As recently estimated in Sinclair's Magazine, the railways of this country would consume, under present operating conditions, at least 170,000,000 barrels of fuel oil annually, if they were using it for a third of their traffic. On a similar basis of calculation, about 340,000,000 barrels of fuel oil would be required annually to handle a third of the world's railway traffic, under present operating conditions.

This estimate should not be interpreted as a prediction of the probable rate of consump-



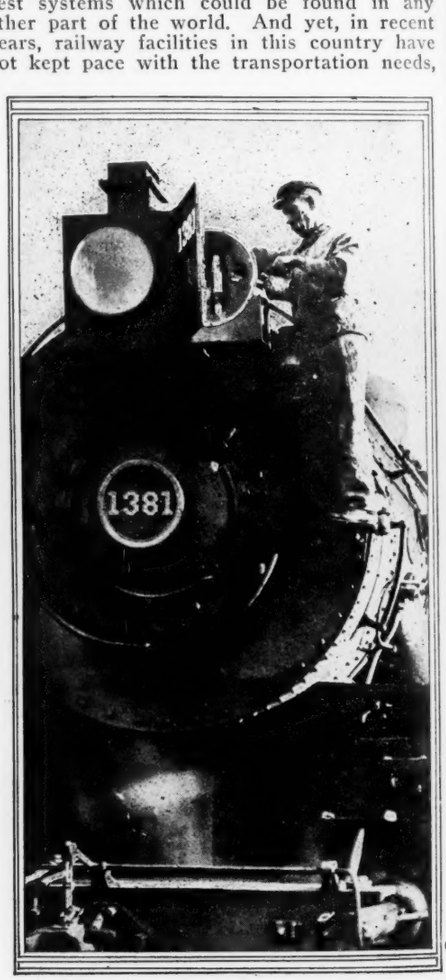
Petroleum products are used for many miscellaneous purposes in railway shops, where intense heat is required.

tion of fuel oil by the railways in the near future. The factors involved are too numerous to permit of a guess as to the rapidity of increase. But the estimate serves at least two purposes; first, to show that the railway industry is relying more and more upon petroleum; and second, to illustrate the magnitude of the demand which should be recognized at least as possible.

Railways, of course, are not the only large users of fuel oil. In fact, the demands have been increasing more rapidly than anyone would have dared to predict a few years ago. As a result, the problem of the petroleum industry at present is not to find a market for more. The process of change has been under way for several years, and there are many reasons why it is being encouraged. But railways cannot be revolutionized as with a magic wand. Billions of dollars of new capital and many years of effort will be required. In the meantime, the volume of railway traffic must continue to grow, and with it the need of fuel. And when the electrification process is complete, fuel oil will still be required in large volumes for the generation of electric current, petroleum lubricants will still be essential, and other petroleum products which enter into the manufacture and maintenance of electrical systems will be needed in ever greater quantities.

Brakeman filling his signal lamp before starting on a night run

American railways are handling probably about half of the railway traffic of the world. It is not at all certain that this ratio will hold indefinitely. The growth of the American railway industry has been one of the most amazing developments of modern times. In the face of many obstacles, both physical and financial, transportation systems were established which excelled in almost every respect the best systems which could be found in any other part of the world. And yet, in recent years, railway facilities in this country have not kept pace with the transportation needs,



Filling the headlight of a locomotive with oil

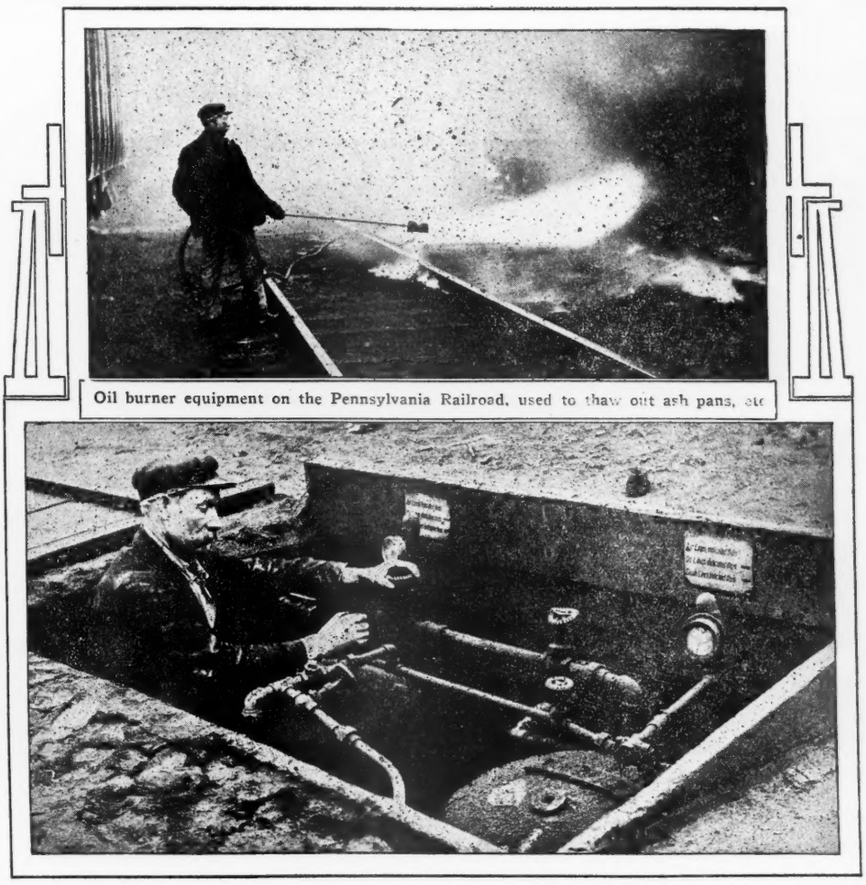
and it was estimated recently that additional investments of a billion dollars annually will be required if the industrial life of the nation is not to be handicapped by inadequate railway service.

It is hardly reasonable to expect that the American railways will be developed as aggressively in the future as in the past. In former days there was a powerful incentive in the form of anticipated profits. Without this incentive, American railway history could not have been written. But the old pioneer days are over, and the enthusiasm of the American railway pioneering spirit has largely disappeared.

In various other countries, conditions are somewhat similar to those which obtained here a generation or two ago. Interest in railway development in those countries is growing, and as credit conditions throughout the world begin to mend, it appears probable that capital in large amounts will be put to work in railway building. This necessarily will involve added demands for petroleum products. It is obvious that the builders will take full advantage of the most recent improvements in mechanical equipment and operating methods.

It should not for a moment be supposed that Americans are the only ones interested in mechanical efficiency. When we speak of the progress which has been made in the United States, we are apt to forget that the rest of the world is not standing still. It is not necessary to go far afield for an illustration.

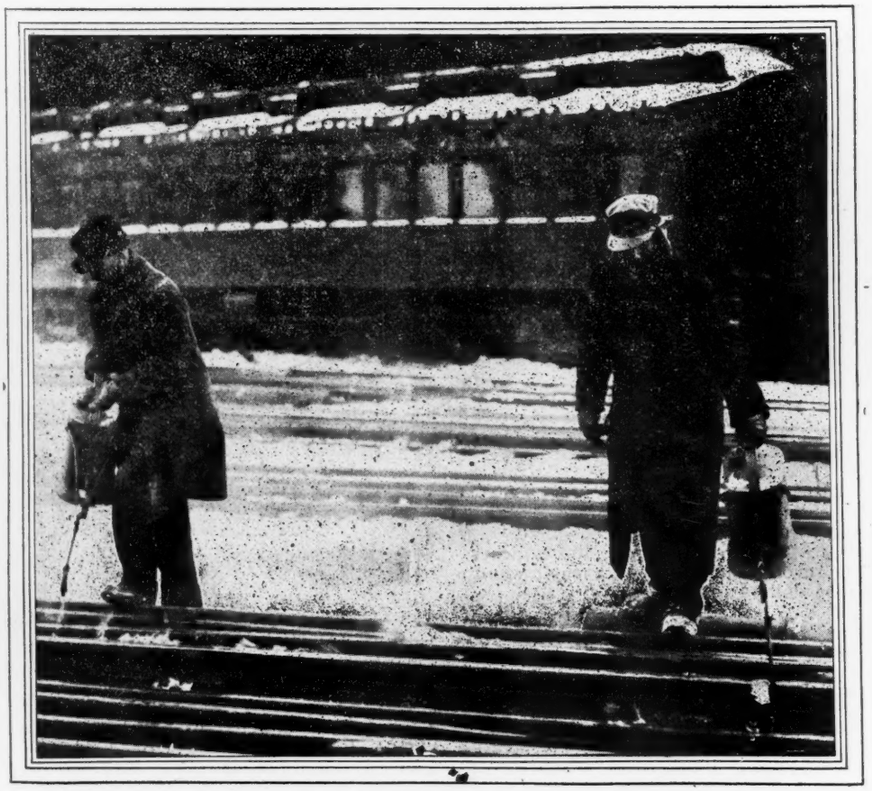
In the Island of Cuba not many years ago, wood was commonly burned in railway locomotives. Today, practically the entire railway system of the Island is being converted as rapidly as possible from a coal-burning to a fuel-oil basis. In this most recent change, Americans have had a hand. All of the trunk line railways of Cuba are under contract with the Sinclair company for their fuel oil requirements and more than one hundred Sinclair engineers have been engaged in the work of converting the locomotives and in building fuel oil installations along the railway lines.



Oil burner equipment on the Pennsylvania Railroad, used to thaw out ash pans, etc

The Cubans were not hasty in deciding upon this revolutionary change. On the contrary, they weighed carefully every argument for and against the adoption of liquid fuel. Under such circumstances there could be no doubt as to what the ultimate decision would be, but it is noteworthy that when this decision was reached, the Cubans wanted no halfway measures. Obviously, they would not have taken the step had they not been assured of a permanent and dependable supply.

No rapid increase in railway consumption of fuel oil can be expected elsewhere, except in countries which are so situated as to receive similar assurances. Unquestionably, the further use of fuel oil and other petroleum products will be highly advantageous from an economic point of view. While it is obvious that the world's consumption cannot exceed the world's production, it should not be forgotten that more than once the petroleum industry has accomplished the seemingly impossible. Unless artificial obstacles are placed in the way, private initiative can be relied upon to develop production to meet the demand, thereby continuing to serve the railways of the world as well as the thousand and one other activities which promote efficiency and progress.



Burning out switches with oil

OIL TAXATION BILL PASSES LOUISIANA STATE SENATE

The senate Tuesday night passed the so-called oil taxation bill introduced by Senator A. R. Johnson. Little argument preceded its final passage.

The measure relates to assessment and taxation of oil and gas properties and the asesssment of mineral and surface rights in and to oil and gas lands and provides for punishment for the swearing of false statements in rendering any return or statement required to be made under the act.

Empire and New Phillips Pools in Oklahoma Week's Features

EMPIRE pool in Stephens County and the new Phillips pool in southwestern Beggs district were important features of the past week in the Oklahoma fields. The former territory, with half a dozen good completions, outranks the other district in new production reported. All wells were confined to the main part of the pool, and no extensions were recorded.

A new Wilcox sand pool is being developed two miles west of the furthermost Beggs pools in northwestern Okmulgee County.

The old Boston lease of the Gypsy Oil Co. in the southwestern corner of Osage continues to be a center of attraction with a third fine well in the Burgess sand.

In Kay County the deepening of old wells gets occasional good results around Blackwell. McCaskey & Wentz and Marland Refining Co. were particularly fortunate in this locality.

Empire Gas & Fuel Co. brought in its No. 7 and No. 10 on the Surber lease in section 33-1S-8W for 600 and 800 barrels, respectively, depth about 1700 feet in each well.

Max Westheimer, who is prominent in the Healdton field and later in the Hewitt pool, got his first well in this territory in No. 1 Maloney in northeast quarter section 4-2S-8W, which started off at 500 barrels from the regular sand.

Shamrock Oil & Gas Co. got two more good wells on its Burke lease in the same section, Nos. 4 and 6 being good for 206 barrels, respectively. Another good completion was the Skelly Oil Co. and Jake Hamon's No. 1 Glass, in southeast quarter section 33-1S-8W, was good for 750 barrels initial production, depth 1698 feet.

OKLAHOMA PRODUCTION

With southwestern Oklahoma registering a slight gain, the estimated daily average output of the Oklahoma fields is divided as follows:

	Barrels
Cushing and Yale	43,500
Healdton-Hewitt	51,100
Garber-Billings	11,300
Other fields	152,400
Total	258,300

IN STEPHENS COUNTY

In Stephens County, Southern Oklahoma, Lone Star Gas Co. has a 50 barrel well in No. 5 Schwalbe at 2225 feet. Carter's No. 2 Lindsay is making 75 barrels at 2175 feet.

Margay Oil Co.'s No. 2 Fink is making 130 barrels at 2125 feet.

Magnolia Petroleum Co.'s No. 3 Kirts is a 45 barrel well at 2152 feet.

Empire Gas & Fuel Co.'s No. 5 Suber is a 20 barrel well at 1685 feet. Same company's No. 6 Suber is making 400 barrels at 1685 feet. Same company's No. 8 Suber is making 600 barrels at 1680 feet. Same company's No. 9 Suber is flowing 800 barrels at 1680 feet.

J. D. Wade's No. 1 Green is making 10 barrels at 600 feet.

Ranger Gulf Oil Co.'s No. 1 McClendon is a 15 barrel well at 668 feet. Waycoff & Ross' No. 2 Ross is good for 10 barrels at 600 feet.

Skelly-Springfield Oil Co.'s No. 2 Hooper is making 20 barrels at 660 feet.

Majestic Oil Co.'s No. 8 Dickerson is a 10 barrel well at 725 feet.

GYPSY COMPLETES TWO MORE WELLS ON ITS BOSTON LEASE

Not satisfied with having the most sensational well ever drilled in Oklahoma, Gypsy Oil Co. has since brought in two more fine wells on its Boston lease, across the Arkansas River from the Cleveland pool in southwestern Osage County. Completion of No. 4 for 3000 barrels initial was reported the previous week, and now comes No. 66, only a short distance away, which has indications of making a similar well in the Burgess sand around 2550 feet. It previously started off at 1500 barrels in a shallower sand at 2450 feet.

North of the old Yale pool, the new territory opened by the Maramac Oil Co. is still featured by the performance of the original well. It is reported drilling itself in every day or so, and now estimated flowing 1000 barrels with increasing gas pressure. This well was brought in over a month ago for 250 barrels initial production and has gradually increased since that time.

A gas showing in Marland Refining Co.'s well on the Streich farm in northeast quarter section 24-23-4W, northwest of the Garber field, had 4,000,000 cubic feet of gas at 1600 feet and is going deeper with the expectation of getting a sand from 2000 to 2400 feet.

NEW PHILLIPS POOL EXTENDED

The new Phillips pool southwest of Beggs was extended a quarter of a mile north by Gladys Belle Oil Co. and Lyons Petroleum Co.'s No. 2 on the Riley Thompson farm, in northeast quarter section 22-14-11, rated a 3000 barrel well on top of the sand at 2768 feet. To the east of this pool a few light producing wells were brought in, extending the limits slightly in that direction. A dry hole drilled by Phillips Petroleum Company in this section just southwest of the Waite Phillips discovery well, probably indicates that little can be expected on the east. It was abandoned at a total depth of 2860 feet. In the southeast quarter of section 15, same township and range, John H. Rebold is reporting a good well on top of the sand at 2758 feet which is a very interesting test. The Phillips pool at the present time constitutes about a dozen producing wells with a daily production of approximately 27,500 barrels. In Creek County, two miles west of the Wilcox pool, the White Oil Corporation has brought in an offset to the Misener discovery well, which makes that locality look very feasible for a prolific Wilcox sand pool. No. 1 on the Martha Scott farm, in southwest of northeast of section 23-15-10, started off at 500 barrels at depth close to 3000 feet. Other wells near by are nearing the sand, and interesting developments should be reported in this section within the next few days.

IN TILLMAN COUNTY

In Tillman County, Delta Oil Co.'s No. 1 River Bed is a 75 barrel well at 1582 feet. In Carter County, Wirt Franklin's No. 2 Schell lenberger is a 260 barrel well at 2085 feet. Carter Oil Co.'s No. 1 Ward is a 360 barrel well at 2105 feet. Southerland Petroleum Co.'s No. 3 Ward is making 200 barrels at 1540 feet. Same company's No. 6 Ward is a 350 barrel well at 1760 feet. Wirt Franklin's No. 6 Horton is a 400 barrel well at 1570 feet. Gypsy Oil Co.'s No. 7 Ward is a 750 barrel well at 2205 feet. Westheimer Oil Co.'s No. 9 Dillard is a 300 barrel well at 2205 feet. Wolverine Texas Oil Co.'s No. 12 Westheimer is a 310 barrel well at 450 feet. Humble's No. 2 Ward is making 326 barrels at 565 feet. Skelly Oil Co.'s No. 3 Westheimer is making 210 barrels at 1545 feet. Plains Oil & Gas Co.'s No. 4 Dillard is a 75 barrel well at 1460 feet. Critchlow & Royer's No. 1 Deberry is a 450 barrel well at 2240 feet.

GOOD WELLS IN HEWITT POOL

The Hewitt pool in Carter County got some fine wells among its twenty-eight new producing wells of the week. Plains Oil & Gas Co.'s No. 4 Dillard, section 22-4S-2W, was the largest individual well, with initial production of 1100 barrels, at 1463 feet. Wirt Franklin's Nos. 4 and 5 on the Horton lease in section 21-4S-2W, were completed for about 500 barrels each from next to the deep sand at 1900 feet. Skelly Oil Co.'s No. 4 Dillard and No. 3 Westheimer, both located in section 22-4S-2W, were completed for 600 barrels and 500 barrels, respectively; depth of the former 1450 feet, and the latter 2115 feet. Critchlow & Boyer brought in a good well on their Berry lease in northeast quarter section 27-4S-2W, good for 600 barrels initial production, in the deep sand at 2249 feet. Other wells range from 500 barrels downward, and were brought in for the most part from the deep sand, which appears to be holding up better than the shallow formation. A late report is authority for the statement that the Gypsy Oil Co. is getting an important well in the southwest of the northwest of the northeast of section 27-19-4, wih 1000 feet of oil in the hole at a total depth of 3464 feet. This is the deepest test ever drilled in a locality known as the old Ingalls district, west of the Yale field. Several holes have been put down in the vicinity without any encouraging results.

PERMITS FOR EXPLORATION

Washington, D. C., June 30.—The following permits for exploration were issued this week by the General Land Office, Interior Department, under the provisions of the oil land leasing act:

Wilson Hall Bennett, 2560 acres in township 18N, range 8E, San Bernardino County, Calif.

Reno Wyoming Oil Co., 2511 acres in township 45N, range 97S, Hot Springs County, Wyoming.

F. Grant Keyes, 2560 acres, townships 21 and 22S, range 23N, Chaves County, N. Mex.

Clarence C. Calhoun, 2560 acres in townships 24N and 25 N, range 87W, Carbon County, Wyoming.

Henry H. Harriman, 2560 acres in townships 24N and 25N, range 87W, Carbon County, Wyoming.

Rocky Mountain Oil & Producing Co., 1280 acres in township 25N, range 87W, Carbon County, Wyoming.

Chief Interest in Kansas Centers Around Empire Well

CHIEF interest in Kansas centers around the Empire Gas & Fuel Co.'s well in northeast of southwest of northwest of section 27-26-7, lying between the western Greenwood County development in the old Eldorado pool, which is fifteen feet in a sand at 2187 feet and swabbed 250 barrels the first twelve hours, about five miles from the nearest production, and has good indications of opening a small pool between two older districts. In north central Marion County a test is being drilled by Krow and others in section 28-18-4, reporting a good showing of oil at 2475 feet. This is no doubt the regular Peabody sand as is now found to the south in the newer pools.

The Teter pool in northwestern Greenwood County had another good well in the recent completion of the Empire Gas & Fuel Co.'s No. 4 Teter in section 16-23-9, which is good for 200 barrels in the 2500 foot sand. Little late developments of importance were reported in the Peabody district, many wells being held up by fishing jobs and lack of material caused from an unprecedented rush to that region by companies and individuals.

KANSAS PRODUCTION

The abnormal flush production of the old Peabody-Elbing pools was cut slightly by a 2500 barrel loss in that territory. The slow but steady gain in the newer fields in central Marion Vounty held the balance to a close margin. The estimated output of the Kansas field is divided about as follows:

	Barrels
Augusta-Eldorado	48,100
Elbing-Peabody	36,900
Other fields	73,400
Total	98,400

SECRETARIES OF INTERIOR AND NAVY ARE GOING UP TO ALASKA

Washington, D. C., June 30.—Following the receipt early in June of the report of the special committee appointed by him to study conditions in Alaska, Secretary of the Interior Payne has decided to make a personal investigation of conditions in the territory, and will leave Washington Friday for a month's trip.

Secretary Payne will go direct to Seattle, where he will meet Secretary of the Navy Daniels, and will sail for Alaska on July 10. While in the territory, the two cabinet members will secure first hand information regarding rail and other facilities, and will make an inquiry as to conditions in the oil industry there. Secretary Payne is of the opinion that the Alaskan oil fields, if developed, may prove an important addition to our existing sources of supply, while Secretary Daniels is interested in ascertaining whether any of the oil produced could be made available for navy needs.

TWIN STATE COMPLETING TWO

Twin State Oil Co.'s No. 1 Kobb, in 5-19-5, northeast corner of the northwest quarter of the southeast quarter, is preparing to shoot at 3683-3700 feet. It swabbed 25 barrels a day from a sand at this depth.

In 19-28-4, the Twin State Oil Co.'s No. 1 McCauley has a showing of oil at [illegible] in the northwest corner of [illegible] quarter.

Both these wells are in [illegible] ing closely watched.

PIPE LINE LEGISLATION IN LOUISIANA

A bill making pipe lines common carriers has been passed by the Louisiana house and now goes to the senate for approval. Governor Parker is known to favor the measure, and if the senate acts favorably it will soon become a law. Much wrangling featured the committee hearings, the Standard Oil Company opposing the measure while most of the independent operators favored such a law.

The OIL WEEKLY

does not take any particular credit to itself for belonging to the Audit Bureau of Circulations.

To supply A. B. C. reports on its circulation is good business practice on the part of any publication and the Oil Weekly is glad to render this necessary service to advertisers.

It is not that the Oil Weekly requires any check on the honesty of its circulation statements. It is because it is honest that it is able to qualify for A. B. C. membership. Circulation falsifiers are not eligible.

The Oil Weekly is a member of the A. B. C. because it wishes to identify itself with advertisers, advertising agents and other reputable publishers in this co-operative effort to discountenance unfair methods.

The advertiser has one way only of distinguishing. He knows that every publication that belongs to the A. B. C. tells the exact truth about its circulation. With other papers he lacks that assurance.

The Bureau's report on the circulation of the Oil Weekly will be sent to advertisers on request.

PERSONAL MENTION-MEN YOU KNOW

M. W. Mattison, of Houston, a specialist in oil accounting, has accepted the position as head of the Statistical and Taxation Bureau of the American Petroleum Institute with offices in New York. He will take charge of the office July 1. Mr. Mattison became an "oil man" in 1904 when he was employed by Heywood Brothers of Jennings, La. He became a public accountant in 1911 and moved to Beaumont. In 1918 he moved to Houston. During the past two and one-half years he has spent most of his time on income and excess profits tax matters as related to oil concerns. During this time he represented many oil companies before the Commissioner of Internal Revenue.

In Stephens [illegible]

Frank Saliner, president of the Vanderbilt Petroleum Company, is in New York on a business trip in behalf of the company.

John W. Higgins, connected with the Bureau of Mines, with headquarters in Bartlesville, Okla., who has been making a study of evaporation of crudes, was in Houston this week and called on the Oil Weekly.

C. E. Girten, vice president of the Gulf Publishing Company, has just returned from Portland, Ore., where he assisted in placing Houston on the map by singing in the Kiwanis Glee Club. He complained of a sore throat on his return, but said it was the result of a bad cold and the absence of the best cold medicine in the world.

George Scheultz, who assists in keeping the Texas Company bosses posted as to progress of wells in various fields of the country from his office in Houston, departs Saturday for a two week's automobile tour of West Texas. He will make short stops at San Antonio and Austin and his wife is making the trip with him to remind him when to return to his duties.

Judge Jacob C. Baldwin, south Texas operator, last week completed an automobile trip over the state o Texas. It was taken for pleasure and extended over a period of more than three weeks.

Miss Florence Sterling of Houston, secretary of the Humble Oil & Refining Company, was the selected honorary secretary of the Democratic National Convention at San Francisco this week. She was the only Houston delegate to be honored with a convention office. Miss Sterling is a sister to R. B. Sterling, president of the Humble, and is well known in oil circles in the Southwest.

Jack Ryan of the General Refining Company has been in Kansas City this wek on business.

Paul B. Mason of Eastland, manager of the Prairie Oil & Gas Co. there, was in Fort Worth last week.

E. J. Gorman, general manager of the Twin State Oil Company at Tulsa, has been over in the Yale District this week where the company has some important wells nearing completion.

Robert T. Hill, of the geological firm of Hill, Brantley & McFarland of Dallas, was in Wichita Falls Monday and Tuesday.

C. H. Pape of the Selby Oil and Gas Company, with Mrs. Pape and their daughter, left Tulsa Saturday for a vacation trip to California.

WILLIAM McADOO, JR.,

Is not following in the footsteps of his popular father, but is getting into the oil business in earnest. He has been selected as chairman of the board of the Plymouth Petroleum Company.

After looking over the oil fields of the Ranger territory, W. C. Naramore of the geological department of the Sinclair Consolidated Oil Company returned to New York last week.

SINCLAIR PICNIC

It required six interurban cars to carry the 300 officials and employes of the Sinclair Oil Corporation from the Houston headquarters to Galveston last Tuesday for the annual outing. The company furnished everything and the crowd enjoyed bathing to the fullest, had dinner at Rogers on the island, and spent the rest of the day in dancing and other amusements.

E. C. Oates, of the engineering department of the Sinclair Gulf is suspicious of garage charges. Last week he was told that a Houston garage would put in a new key in the axle of his automobile for $5. Oates thought that a trifle high so bought a key for twelve cents, went home and from the time he started to get his jack out of the box until the wheel had been jacked up, the key put in place and the tools back it required exactly twelve minutes.

H. A. Speer, the oil king of Duval County, who makes his headquarters at Corpus Christi, was in Houston this week.

T. W. Horn, South Texas operator, was at Stratton Ridge in Brazoria County this week, trying to locate the spot where the sheriff a few months ago located a moonshine still.

George Hindman, president of the United Petroleum Company at Houston, was in New York the past week on business.

C. E. Morgan, general manager of the Simms Petroleum Company in Louisiana, with headquarters at Shreveport, was a Houston visitor this week.

R. L. Young, president of the Monarch Oil and Refining Co., is in Wichita Falls.

R. A. Harvey of Stribling & Co., Houston, was in North Texas last week.

T. P. Lee, president of the Republic Production Co., has returned to Houston from a business trip to New York.

James L. Darnell, who resigned March 15, his position as head of the research division, income and excess tax department of the United States treasury department, has returned to his general practice as a petroleum engineer with office at 170 Broadway. He also has a branch office at Houston in which city he was visiting during the past week.

MISSED FORMATION

Midco Petroleum Co.'s No. 2 test in the southwest of section 22, same township and range, has apparently missed any formation and is now drilling at 4850 feet. There was a fairly good showing in the Hoover sand at 2100 feet, but it did not justify making a well and was drilled deeper.

PROBE OIL STOCKS

Federal Judge Jack at Alexandria has asked the federal grand jury to investigate charges that the mails have been used to promote the sale of questionable oil stock. He also instructed the jury to look into the matter of alleged profiteering. The Louisiana legislature is now considering a blue sky law that would deal with the floating of oil stocks.

Two ton Federal owned and operated by U. S. Oil & Supply Co. Providence, R. I.

Federals are ever-ready.

In the oil business as in many other allied businesses the "ever-ready" qualities of the Federal gave this truck a foothold which it it is daily extending.

For long haul, for short haul, for rainy weather, for poor roads—always can the Federal be depended upon to perform the task. It is this dependable service—this capacity to carry the load to its destination—that beget warm words of commendation from owners. One good service deserves another—that is why they are so generous in telling their friends of what the Federals are doing for them.

You, too, can obtain a Federal truck of a capacity to fit your need from your local dealer.

If you wish to know what Federals are doing, write for "Traffic News", which tells interestingly the extent of their activities. It will be mailed free.

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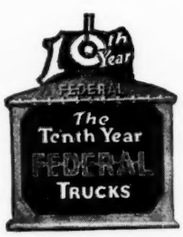

This is the sign of the 10th year Federal —a sign significant of ten years' success in every field of truck transportation.

Another FEDERAL

Mid-Continent Daily Average Shows Increase

Monthly Total Off for Month of June

ALTHOUGH the four states in the Mid-Continent showed a June total production less than for the previous month, it is found that the daily average of June was slightly in excess of May. The four states produced a total of 22,589,753 barrels in May while the total in June was only 22,211,600 barrels, but the daily average for June (30 days) was 740,387 barrels against 728,702 barrels in May (31 days).

In the North Texas there was a small decrease in total production during June, when compared with May, but the Central West Texas district showed a nice gain over the previous month. In the Coastal section a decrease was also noted in total for the month.

There were 522 completions in Texas in June against 623 completions in May, while the good wells numbered 341 last month again 470 in May. The initial production last month was 71,796 barrels against 139,898 barrels in May.

Oklahoma's total production showed a small decrease during the past month on account of the month having one day less than had May. Kansas showed a gain of nearly 100,000 barrels for the month.

The state of Louisiana was off about 300,000 barrels, but the production daily is holding up fairly well and the daily average has settled to an average point.

In the Coastal section of Texas, the monthly total was off a little, the daily average held up and showed a slight gain. Of the 82 completions in the Coastal fields, 59 of them were producers. No important extensions were made during the month.

The four states of the Mid-Continent have produced a total of 186,963,809 barrels during the nine months ending with June, 1920, as follows:

	Barrels
October, 1919	20,313,069
November, 1919	19,584,140
December, 1919	19,726,029
January, 1920	20,357,886
February, 1920	19,787,957
March, 1920	21,225,610
April, 1920	21,167,765
May, 1920	22,589,753
June, 1920	22,211,600
Total	186,963,809

Gain in West Texas

West Texas registered a decided gain in production for the month of June, over May records, in spite of the fact that June had one less day than May, and the principal increase in production came from the fields of Stephens County.

In fact, both the Ranger and Desdemona sections showed a slight falling off over May records, though the decline in each field was less than one day's runs. This would indicate an actual increase in daily production of a few hundred barrels a day for the month.

This record has been established in spite of the fact that the initial production record of new wells completed in June is probably the lowest of any for two years, there being only about half as much new production added in June as in May. In actual completions also, June was a lean month, showing only 139 new producing wells, in comparison with 227 in May.

The record thus established is one of the best ever made by the fields of West Texas, and indicates a stability of production which has been discredited from many sources.

A noticeable feature of the West Texas summary for June is that the fields of Stephens County made more oil than all the rest of the district combined.

PRODUCTION BY STATES

Following is the estimated total production for the month of June for the four states of Texas, Louisiana, Oklahoma and Kansas, composing the Mid-Continent:

North Texas	2,983,250
Central West Texas	3,036,990
Texas Coastal	1,968,760
Corsicana, Miscellaneous	44,000
Total Texas	8,033,000
North Louisiana	3,441,000
South Louisiana	157,740
Total Louisiana	3,601,740
Oklahoma	7,649,610
Kansas	2,927,250
Total Okla.-Kan.	10,576,860
Total four states	22,211,600

The daily average production for the month was 101,233 barrels, valued at $354,315. The total value of oil produced in West Texas for the month is $10,629,465.

The outstanding features of the month in the drilling campaign have been the development of extensions to the fields of Stephens County, and the pushing west of the Ranger field.

To undertake to define the proven areas of Stephens County would be to outline a series of "pools" which would overlap each other and practically cover the eastern half of the county, with additional production sketched in the Gunsite district, and to the northward of Breckenridge seven miles, where the Roxana and Sapulpa have a joint test which is yet of an undetermined nature as far as amount of production is concerned. The city of Breckenridge seems to have been located on what is to be the most prolific section of the county, and some of the best wells of the past two months have been either in the city itself or nearby.

The extension of the Ranger field to the west has not reached its limit yet, and the Ray well of the Gulf Production Company indicated that production may be taken several miles in advance of the present outlined field. This is the only part of the Ranger field that is attracting any attention now.

Sipe Springs Section

Down in the Sipe Springs and Rising Star section, enough wells are drilling to open another Desdemona pool, if only the "pool" can be found. The Atlantic got a fairly good well on the Lusk lease, north of Sipe Springs, and outside of this, all the deeper tests are making time, with many of them below the depth at which production was expected.

The shallow field at Sipe Springs has about proven its possibilities, unless some more productive area is annexed, and is adding about 1200 barrels of oil a day to the sum total of the Desdemona section's output.

During the latter part of the month several of the companies with wells drilling or drilled in the Desdemona field proper have started operations for deeper pay, with the theory that the contact of the Bend lime and the Ellenberger has a pay horizon in this district the same as it has in the Ranger field. This activity will be watched with interest.

Among the wildcats Coleman County has the stage. South of Santa Anna the Gladys Belle Oil Company has a good well, completed last month, on the Pope lease, and at the close of June it has two other tests making showing of oil and being closely watched.

In Glasscock County the General Oil Company has a well uncompleted at the close of June, and estimated by oil men at 20 to 30 barrels a day on the pump, when completed. It is heavy black oil.

June Disastrous Month

June proved a disastrous month for the fields of the Wichita country. This was particularly true of the northwest Burkburnett section. While there were two more completions than in May, the percentage of failures was three times that of the previous month. Initial production for the new Burkburnett wells was but little more than half of the total for May.

The one brilliant spot on the Burkburnett screen is in total production. The grand total for June is less than that for May. However, June had one less day than did May. In production the Burkburnett field more than held its own. Pipe line runs show a daily total through June of 85,250 barrels. The bulk of this production is coming from the recent development to the northwest of the pool. The Birk and Michna tracts have contributed largely to the new production.

Electra maintained its steady production. This field seems to be good for its 10,000 barrels daily. For months and even years it has been doing that much or more. Indications are for continued production around that figure.

Jump in K-M-A District

Out in the K-M-A section total production took a jump for the month. New wells of high initial production contributed to this. This new field, with runs from the old Iowa Park field, has been contributing a daily average of 3000 barrels to the total for the Wichita Falls section.

Wildcat wells contributed nothing to production last month. Few wildcat wells were completed.

Drilling activity fell off to a marked degree in the Burkburnett section. There was a decrease in drilling wells, rigs and locations for the northwest extension. Several causes have contributed to this. Some operators have been held up because of the difficulty in getting money. The shortage of material, especially casing of the smaller sizes, has had a share in decreasing drilling.

Drilling wells in North Texas wildcat territory showed a higher total than for May. Many of the rigs and locations of a month back are now in the course of drilling. Panhandle counties also show a higher total of drilling wells, with a corresponding decrease in rigs and locations.

CENTRAL WEST TEXAS SUMMARY FOR JUNE, 1920

EASTLAND COUNTY SUMMARY FOR JUNE

Company and Well	Depth	Ini'ial Prod. in bbls
Carter Oil Co. No. 1 Pierce	3800	*
Chapman et al No. 4 Wright	3490	25
Frank Day Oil & Gas Co. No. 1 Caudle	3205	175
Folsom Petroleum Co. No. 2 Hawks	3750	75
Fulton Petroleum Co. No. 1 Brocks	3515	*
Gates Oil Co. No. 2 Barker	3380	*
Gladstone Oil & Refining Co. No. 4 Barton	3299	*
Gulf Production Co. No. 1 Ray	3598	225
Humble Oil & Ref. Co. No. 12 Fargason	1500	80
Magnolia Pet. Co. No. 5 N. B. Harris	3440	75
Magnolia Pet. Co. No. 7 Harris	3458	50
Magnolia Pet. Co. No. 8 Harris	3455	25
Magnolia Pet. Co. No. 11 Beck	3400	15
Magnolia Pet. Co. No. 15 Rock	3405	50
Maxwell et al No. 1 Miller	3600	*
Money Oil Assn. No. 1 Reynolds	3255	*
Plateau Oil Co. No. 1 Baumgardner	3300	*
Prairie Oil & Gas Co. No. 2 Davis	3509	300
Prairie Oil & Gas Co. No. 6 Davis	3440	1800
Prairie Oil & Gas Co. No. 8 Davis	3390	1100
Prairie Oil & Gas Co. No. 3 Earnest	3320	150
Prairie Oil & Gas Co. No. 11-B Madding	1980	*
Prairie Oil & Gas Co. No. 3 Howard	3385	3¶
Ranger Cisco Oil Co. No. 1 Miller	3220	*
Ranger Petroleum Co. No. 1 Miller	1550	*
Ranger Rock Island Oil & Ref. Co. No. 8 Wright	3510	50
Root et al No. 4 Connellee	1645	25
Root et al No. 5 Connellee	1695	*
Root et al No. 6 Connellee	1660	25
Root et al No. 1 Carter	3598	200
Root et al No. 1 Baumgardner	3498	8¶
Royal Duke Oil Co. No. 3 Hanks	3405	*
Sinclair Cons. Oil Corp. No. 6 W. T. Davis	3450	*
Sinclair Cons. Oil Corp. No. 4 Earnest	1870	120
Sinclair Cons. Oil Corp. No. 5 Earnest	1900	10¶
Sinclair Cons. Oil Corp. No. 4 Danley	1880	65
States Oil Corp. No. 1 Hamer	1918	100
States Oil Corp. No. 9 Harrell	1840	¶15
States Oil Corp. No. 5 Turner	3570	*
States Oil Corp. No. 1 Carter	3664	50
States Oil Corp. No. 3 Parrack	1760	100
States Oil Corp. No. 5 Parrack	2090	*
States Oil Corp. No. 2 Hamer	1880	40
Sullivan et al No. 1 Downtain	3410	*
The Texas Co. No. 4 Hise	3415	150
The Texas Co. No. 19 Littleton	3390	800
The Texas Co. No. 3 Hise	3460	*
The Texas Co. No. 6 Turner	3530	200
T. & P. Coal & Oil Co. No. 7 Terrell	3370	300
T. & P. Coal & Oil Co. No. 1 Cook	4342	*
T. & P. Coal & Oil Co. No. 2 Davis	3260	*

DESDEMONA SECTION SUMMARY FOR JUNE

Alvin Lake Oil Co. No. 2 Weaver	2875	15
American Petroleum Co. No. 12 Houser	277	*
American Petroleum Co. No. 13 Houser	277	4
American Petroleum Co. No. 14 Houser	220	5
American Petroleum Co. No. 15 Houser	265	*
Anderson et al No. 1 Hilley	365	*
Ark. Nat. Gas Co. No. 1 Wagley	380	*
Atlantic Oil Prod. Co. No. 3 Lusk	2580	100
Nailey et al No. 1 Hale	400	4
Z. M. Battis et al No. 1 Battis	602	*
Mills Bennett No. 1 Rauhut	390	16
Mills Bennett No. 2 Rauhut	386	12
Mills Bennett No. 3 Rauhut	395	10
Bison Oil Co. No. 1 Bryan	450	*
Blackshere Texas Oil Co. No. 1 Meers	3575	*
Bloomington Oil Co. No. 1 Winfrey	480	*
Brewer et al No. 2 Graves	244	2
Calloway Oil Co. No. 2 Lee	670	*
Clarion Oil Co. No. 1 Jay	448	*
Cole Petroleum Co. No. 1 Palmer	335	*
Comanche Home Oil Co. No. 2 Graves	245	*
Cox et al No. 1 Graves	242	10
Cox et al No. 2 Graves	350	6
Dewey Oil Co. No. 1 Dewey	402	15
Eallen et al No. 1 Roberts	498	*
Economy Oil Co. No. 1 Belcher	476	5
Effin Oil Co. No. 1 Harper	3075	125
Gallagher & Lawson No. 2 Dabney	2678	650
Grinstead et al No. 1 Dewey	442	4
Grinstead et al No. 2 Dewey	450	*
Grinstead et al No. 1 Hale	357	5
Grinstead et al No. 2 Hale	450	*
R. O. Harvey et al No. 4 Russell	2950	*
Humble Oil & Ref. Co. No. 2 Moorman	2778	15
Humble Oil & Ref. Co. No. 1 Graves	2780	*
Iowa Bankers Assn. No. 1 Hoffman	355	4
Kenyon & Leidecker No. 1 Cunninghom	495	*
Kirk et al No. 1 Ray	160	*
Lady Luck Oil Co. No. 1 Hargraves	400	*
Lameta Oil Co. No. 1 Lee	398	*
Lameta Oil Co. No. 2 Lee	400	*
Lightfoot et al No. 3 Jackson	301	7
McLain et al No. 1 Lee	385	12
McLain et al No. 3 Sue	390	6
Mid-Texas Oil Co. No. 1 Dewey	410	*

DESDEMONA SUMMARY—Continued.

Company and Well	Depth	Ini'ial Prod. in bbls
Mid-Texas Drilling Synd. No. 1 Hoffman	480	*
Mobley et al No. 1 Chrestman	325	*
Mohawk Oil Corp. No. 31 Jackson	312	5
Murray et al No. 1 Gin Lot	500	*
Homer Peeples No. 1 Hare	315	*
Homer Peeples No. 1 Jackson	287	*
Photos et al No. 1 Morgan	320	*
Pool et al No. 1 Hoffman	506	*
Post Duke Oil Co. No. 3 Anderson	3058	240
Ranger Rock Island Oil & Ref. Co. No. 2 Brown	3010	*
Rex Refining Co. No. 7 Jackson	308	10
Rex Refining Co. No. 8 Jackson	272	15
Russell Oil Co. No. 1 Leonard	294	*
Safety First Oil Co. No. 1 Duke	350	*
Simms Oil Co. No. 4 Weaver	3050	15
Simmons et al No. 1 Graves	265	*
Simmons et al No. 2 Graves	270	*
Sipe Oil Co. No. 10 Wagnon	250	18
Sipe Springs Pet. Co. No. 2 Huddlestone	390	*
Sparks et al No. 7 Jackson	268	12
Sparks et al No. 8 Jackson	270	8
Sterling Oil Co. No. 7 Graham	357	*
Tate et al No. 1 Morgan	322	*
Texas Clover Oil Co. No. 1 Haney	3100	*
The Texas Co. No. 1 Hogan	3180	*
United Oil Co. No. 2 Boykin	425	*
United Oil Co. No. 1 Boykin	354	12
Valley Mills Oil Co. No. 3 Graham	285	2
Warren Wagner No. 2 Anderson	2854	240
Warren Wagner No. 4 Anderson	2895	10
Waurika Oil Co. No. 3 Tate	3040	¶1
R. M. Weaver et al No. 1 White	2727	65
Wells & Pugh No. 1 Hale	410	*
Westchester Oil Co. No. 1 Snodgrass	3550	*
Whitesides et al No. 3 Morgan	320	*
Winner Oil Co. No. 1 Boykin	484	*
Zigler et al No. 2 Boykin	370	8

STEPHENS COUNTY SUMMARY FOR JUNE

Aubyme Oil Co. No. 2 Langford	3338	50
Breckenridge Oil Corp. No. 2 Wragg	3145	800
Brown Oil Co. No. 1 Guest	3145	150
Brown Oil Co. No. 5 Heatley	3165	1000
Chapman et al No. 1 Glenn	3250	300
Chapman et al No. 1 Johnson	3263	1000
Cooper-Henderson Oil Co. No. 1 Martin	3220	500
Del-Tex Production Co. No. 1 Roberts	3540	*
Galvez Oil Co. No. 1 Ward	3155	400
Gatewood Oil Co. No. 1 Dozier		30
Gulf Production Co. No. 4 Rollins	3306	60
Gulf Production Co. No. 1 Poe	3270	85
Humble Oil & Ref. Co. No. 1 J. H. Collins	3265	240
Humble Oil & Ref. Co. No. 1 Alexander	3244	25
Humble Oil & Ref. Co. No. 4 Harris	1780	*
Humble Oil & Ref. Co. No. 7 Harris	1812	150
Humble Oil & Ref. Co. No. 3 Sorgee	3675	*
Humble Oil & Ref. Co. No. 1 Castleman	3350	*
Ibex Oil Co. No. 1 Carter	3153	2500
Invincible Oil Co. No. 2 Hicks	3360	15
Lone Star Gas Co. No. 9 Warren	1822	140
Magnolia Petroleum Co. No. 2 Lanham	3260	90
Magnolia Pet. Co. No. 3 C. B. Brown	3083	2000
Magnolia Petroleum Co. No. 4 Brown	3090	2700
Mahlstead Mook Oil Co. No. 1 Sylvanus	3157	500
Mid-Kansas Oil & Gas Co. No. 4 Jackson	3345	*
Mid-Kansas Oil & Gas Co. No. 2 N. J. Rosenquest	3405	*
Mid-Kansas Oil & Gas Co. No. 2 E. Y. Jennings	3190	10
Mid-Kansas Oil & Gas Co. No. 1 S. H. Hill	3115	50
Mid-Kansas Oil & Gas Co. No. 1 Richardson	3330	90
Mid-Kansas Oil & Gas Co. No. 2 Yates	3288	*
Mid-Kansas Oil & Gas Co. No. 4 W. E. Carey	3405	*
Ohio-Texas Oil Co. No. 1 Crowley	3190	150
Okla. Prod. & Ref. Co. No. 2 Sloan	3165	1650
Okla. Prod. & Ref. Co. No. 2 Walker	3148	700
Patterson & Whitney No. 2 Satterfield	3248	*
Phillips Pet. Co. No. 1 Lamb	3860	*
Phillips Pet. Co. No. 4 Holland	3512	*
Pierce Oil Corp. No. 4 Satterfield	3040	10
Pierce Oil Corp. No. 1 Glenn	3268	500
Planters Oil & Gas Co. No. 1 Walker	3385	*
Prairie Oil & Gas Co. No. 1 J. M. Meadows	3380	25
Prairie Oil & Gas Co. No. 1 Dempsey	3765	*
Prairie Oil & Gas Co. No. 3 Cook	3229	60
Prairie Oil & Gas Co. No. 1 Geo. Riddle	3470	10
Prairie Oil & Gas Co. No. 4 Sparks	3404	10
Prairie Oil & Gas Co. No. 5 Sparks	990	†
Quakins Petroleum Co. No. 1 Bruce	3760	20
Ranger Brooks Oil Co. No. 1 Bradshaw	2130	4¶
Texas Rickard et al No. 1 Coffman	3485	25
Riley et al No. 1 Johnson	3248	1400
Scott Oil Co. No. 1 Vance	3180	1100
Sinclair Cons. Oil Corp. No. 1 Fambrough	3385	500
Sinclair Cons. Oil Corp. No. 2 Fambrough	3380	50

STEPHENS COUNTY SUMMARY—Continued.

Company and Well	Depth	Ini'ial Prod. in bbls
States Oil Corp. No. 1 Powers	3640	*
Stephens Co. Oil Co. No. 1 Castleman	3120	1000
Strawn Petroleum Co. No. 7 Stewart	1835	350
Sun Co. No. 2 Chaney	3180	550
Sun Co. No. 1 Ackers	3170	185
Sun Co. No. 3 Stoker	3190	500
The Texas Co. No. 3 Pierce	3390	50
The Texas Co. No. 4 Smith	3065	700
The Texas Co. No. 5 Lauderdale	3225	90
The Texas Co. No. 1 J. T. Spear	3110	800
The Texas Co. No. 4 Pierce	3338	500
The Texas Co. No. 2 Rosenquest	3384	15
T. & P. Coal & Oil Co. No. 1 Harris	1845	*
T. & P. Coal & Oil Co. No. 2 Adams	3740	130
T. & P. Coal & Oil Co. No. 1 Newham	3320	100
T. & P. Coal & Oil Co. No. 11 Hohertz	1725	75
T. & P. Coal & Oil Co. No. 12 Hohertz	1720	100
T. & P. Coal & Oil Co. No. 4 Hohertz	1665	75
T. & P. Coal & Oil Co. No. 1 Jennings	3180	250
T. & P. Coal & Oil Co. No. 1 Holt	3310	50
T. & P. Coal & Oil Co. No. 8 Hohertz	1725	50
Texas & St. Louis Oil Co. No. 1 Goodwin	3735	*
Virginia Oil Co. No. 1 Peeks	3172	1100

CENTRAL WEST TEXAS WILDCAT SUMMARY FOR JUNE

T. & P. Coal & Oil Co. No. 16 Stuart, Palo Pinto County	3075	50
T. & P. Coal & Oil Co. No. 27 Stuart, Palo Pinto County	1720	15
T. & P. Coal & Oil Co. No. 29 Stuart, Palo Pinto County	1640	40
Gladys Belle Oil Co. No. 5 Pope, Coleman County	1590	435
Jeff Meers No. 2 Hartgroves, Concho Co.	1500	*
Lone Star Gas Co. No. 1 Harrington, Palo Pinto County	1005	2¶
Janellen Oil Co. No. 1 Goggin State Bank, Brown County	1140	10¶
M. E. T. Oil Co. No. 1 Patterson, Brown County	1785	*
Consumers Oil & Gas Co. No. 1 Jacques, Palo Pinto County	1005	2¶
Lone Star Gas Co. No. 11 Redford, Palo Pinto County	1000	2¶
T. & P. Coal & Oil Co. No. 28 Stuart, Palo Pinto County	1700	100
Liberty Oil & Gas Co. No. 1 Ford, Brown County	2800	*
T. & P. Coal & Oil Co. No. 1 Latimer, Erath County	3234	10¶
Lone Star Gas Co. No. 2 Herrington, Palo Pinto County	1006	2¶

CONDENSED WEST TEXAS SUMMARY FOR JUNE

Field	Completions	Producers	Failures	Initial prod.	Monthly prod.
Ranger	51	32	19	6,488	899,190
Stephens County	77	60	17	25,500	1,605,600
Desdemona	82	37	45	1,692	435,600
Wildcats	13	10	3	205	.....
Moran	..	..	..	....	3,600
Strawn	..	..	..	....	69,000
Coleman	..	..	..	....	15,000
Brown	..	..	..	....	9,000
Totals	223	139	84	33,885	3,036,990

*Salt water—abandoned.
¶Million cubic feet gas.
†Dry and abandoned.

MOWRY BATES
BERNARD H. LASKY
Petroleum Engineers and Geologists
Appraisals—Geological Reports
305 Atco Building **Tulsa, Oklahoma**

NORTH TEXAS SUMMARY FOR JUNE, 1920

BURKBURNETT SUMMARY FOR JUNE

Company and Well	Depth	Ini'ial Prod. in bbls
Aggers Oil Co. No. 2 Roberts	1290	100
Alexander et al No. 1 Bilderbach	1285	*
Apple et al No. 2 Roberts	1575	60
Associated Prod. Co. No. 1 Somerville	1335	*
Ark-Tex Oil Co. No. 3 George	1600	500
Alexander, Johnson & Brooks No. 1 Lamb	1290	*
Badger-Texas Oil Co. No. 2 Dodson	1585	*
Baker et al No. 3 A. Morgan	1635	250
Barkley & Meadows No. 4-B Schmisseur	1830	75
Barkley & Meadows No. 6 Daniel	1290	*
Bankers & Merchants Oil Co. No. 4 Daniel	1315	100
Bankers & Merchants Oil Co. No. 5 Daniel	1280	200
Blackhear Oil Co. No. 1 Holtzen	1640	*
Blackstone Oil Co. No. 1 Michna	1650	*
Bradley Oil Co. No. 1 Michna	1810	*
Brown & McAllister No. 2 Ramming	1730	75
Brown & McAllister No. 3 Ramming	1750	100
Burk-Cameron Oil Co. No. 2 Foster	1855	60
Burk-Kinney Oil Co. No. 1 L. Morgan	1665	75
Burk Serene Oil Co. No. 1 Powell	1300	10
Burk Sheffield Oil Co. No. 3 George	1600	300
Burk Waggoner Oil Co. No. 3 Allen	1625	*
Chappel & Owens No. 8 Daniel	1314	75
Chappel & Owens No. 9 Daniel	1300	125
Circle E. Oil Co. No. 1 McGregor	1400	*
Couch & Winfrey No. 1 Daniel	1305	125
Couch & Winfrey No. 4 Daniel	1314	150
Danciger et al No. 1 Michna	1875	500
Danciger & Emerich Oil Co. No. 7 Michna	1610	600
Danciger & Hull-Tex Oil Co. No. 2 Michna	1630	350
Danciger Oil & Ref. Co. No. 1 Siber	1620	250
Danciger & Ramming No. 6 Michna	1600	300
Danciger & Ramming No. 8 Michna	1615	800
Delta Oil Co. No. 1 River Bed	1870	*
E. M. F. Oil Co. No. 1 Roller	1370	*
E. M. F. Oil Co. No. 1-B Roller	1745	*
Empire-Texas Oil Co. No. 1 L. Morgan	1590	*
Everets & O'Neil No. 2 Allen	1005	*
Fern & Glenn No. 1 Morgan	1630	40
Franklin Drilling Co. No. 2 Morgan	1630	50
Gilbert True Oil Co. No. 1 Poe sub. 3	1680	*
Gilliland Oil Co. No. 38 Hardin	1685	15
Gilliland Oil Co. No. 65 Hardin	1670	30
Gilliland Oil Co. No. 66 Hardin	1660	25
Godley-Weber Oil Co. No. 2 Brannon	1710	50
Godley-Weber Oil Co. No. 3 Brannon	1715	50
Godley-Weber Oil Co. No. 7 Brannon	1710	75
Godley-Weber Oil Co. No. 11 Brannon	1710	75
Godley-Weber Oil Co. No. 14 Brannon	1715	50
Godley-Weber Oil Co. No. 16 Brannon	1710	75
Godley-Weber Oil Co. No. 18 Brannon	1715	75
Gulf Production Co. No. 3 Michna	1630	75
Gulf Production Co. No. 3-B Daniel	1344	*
Gypsy Burk Oil Co. No. 1 Allen	1610	50
Healdton Oil & Gas Co. No. 6 Evans	1600	15
Hull-Tex et al No. 1 Michna	1720	*
Halleck & Whaley No. 1 Bentley	1750	*
Higdon Oil Co. No. 1 Shive	1130	*
Humble Oil & Ref. Co. No. 27 Serrien	1700	100
Invader Oil Co. No. 2 Daniel	1245	150
Jupiter Pet. Co. No. 2 Siber	1500	*
Kansas & Gulf Oil Co. No. 1 Evans	1670	10
King Oil Co. No. 8 Waggoner	1585	*
R. H. Kirby No. 1 Michna	1650	800
Kirby et al No. 1 Heiserman	1650	400
Knight, Grafa & Hart No. 1 Siber	1855	*
Knight, Grafa & Hart No. 1 Snoddy	1675	*
J. C. Lane No. 1 Bailey	1785	*
Lewis & Smith No. 1 Bilderbach	1285	*
Lewis & McPhall No. 1 Lamb	1285	*
Langford et al No. 9 Brannon	1715	5
Langford et al No. 10 Schmisseur	1715	25
Langford et al No. 11 Schmisseur	1715	20
Livingston Oil Corp. No. 12 Taylor	1660	75
Livingston Oil Corp. No. 14 Taylor	1655	75
Magnolia Pet. Co. No. 5 Anderson	1825	50
Magnolia Pet. Co. No. 14 Lawler	1670	15
Magnolia Pet. Co. No. 35 Schnocker	1755	20
Magnolia Pet. Co. No. 36 Schnocker	1615	75
Magnolia Pet. Co. No. 37 Schnocker	1740	20
Magnolia Pet. Co. No. 38 Schnocker	1740	20
Magnolia Pet. Co. No. 42 Schnocker	1790	20
Francis B. Meek No. 1 Evans	1635	150
Missouri Oil Corp. No. 1 L. Morgan	1625	125
Missouri Oil Corp. No. 2 L. Morgan	1615	350
Monarch Oil Co. No. 3 Willis	1305	*
Monarch Oil Co. No. 4 Willis	1330	*
Monarch Oil Co. No. 5 Willis	1340	*
Monarch Oil Co. No. 4 Daniel	1225	50
Monarch Oil Co. No. 5 Daniel	1300	150
Monarch Oil Co. No. 7 Daniel	1305	125
Monarch Oil Co. No. 8 Daniel	1300	*
Motex Oil Co. No. 2 Evans	1580	*
Middle States Oil Corp. No. 6 Daniel	1300	50
Middle States Oil Corp. No. 8 Daniel	1330	10
Middle States Oil Corp. No. 9 Daniel	1300	50
Judge Moore et al No. 2 Clark	1710	*
Mulligan, May & McKnight No. 1-B Siber	1845	*
E. Mulligan No. 1 Siber	1715	*
Mulligan & Steiner No. 1 Siber	1625	400
Mulligan et al No. 2 Siber	1285	*
Nortex Oil Co. No. 5 Evans	1625	50
Okla. Pet. & Gas Co. No. 4 Taylor	1650	75
Okla. Pet. & Gas Co. No. 5 Taylor	1665	60
Old Colony United Oil Co. No. 2 Michna	1635	600

BURKBURNETT SUMMARY—Continued.

Company and Well	Depth	Ini'ial Prod. in bbls
Panhandle Ref. Co. No. 10-A Morgan	1610	50
Panhandle Ref. Co. No. 15 Heiserman	1660	50
Pauline Oil Co. No. 1 Siber	1655	*
P. & P. Oil Co. No. 3-A Michna	1665	300
P. & P. Oil Co. No. a-B Michna	1640	500
Pioneer Oil Co. No. 3 Roller	1030	50
Pioneer Prod. & Ref. Co. No. 1 Chenault	1920	*
Porter, Works & Dixon No. 4 Daniel	1300	100
Powell et al No. 1 Siber	1005	*
Priddy & Addicks No. 1 Hunt	150	*
Quanah Oil Co. No. 1 Roller	1885	125
Queen Seven Oil Co. No. 1 Taylor	1695	15
Reliance Oil Co. No. 2 Allen	1925	*
Sammies Oil Corp. No. 4 George	1630	300
Sammies Oil Corp. No. 5 George	1630	450
Schaffner & Mankins No. 5 Daniel	1300	125
Schaffner & Mankins No. 6 Daniel	1310	150
Schaffner & Mankins No. 7 Daniel	1310	150
Schrieber et al No. 1 L. Morgan	1690	*
Security Oil Co. No. 1 Allen	1675	*
Sinclair Oil & Gas Co. No. 7 Yarborough	1620	40
Sinclair Oil & Gas Co. No. 1 Bilderbach	1595	*
Sioux Oil & Ref. Co. No. 1-A George	1615	150
Sioux Oil & Ref. Co. No. 2-A George	1615	250
Sioux Oil & Ref. Co. No. 3-A George	1610	200
Sinclair Oil & Ref. Co. No. 3 George	1620	250
Smiley et al No. 2 Michna	1620	500
Smith & Grafa No. 1 Siber	1705	*
Staley, Langford & Chenault No. 9 Schmisseur	1800	60
Street et al No. 1 Shaw	1500	*
The Texas Co. No. 6 Birk	1600	450
The Texas Co. No. 7 Birk	1600	600
The Texas Co. No. 11 Birk	1610	450
The Texas Co. No. 12 Birk	1610	1500
The Texas Co. No. 14 Birk	1600	500
The Texas Co. No. 44 Morgan	1625	25
Texhoma Oil & Ref. Co. No. 8 Daniel	1300	75
Texhoma Oil & Ref. Co. No. 11 Daniel	1305	50
Texhoma Oil & Ref. Co. No. 17 Daniel	1300	100
Texhoma Oil & Ref. Co. No. 16 Daniel	1310	40
Texhoma Oil & Ref. Co. No. 18 Daniel	1285	60
Texhoma Oil & Ref. Co. No. 19 Daniel	1285	75
Texhoma Oil & Ref. Co. No. 23 Daniel	1315	125
Texhoma Oil & Ref. Co. No. 15 Daniel.	1315	50
Tex-Penn Oil Co. No. 3 George	1610	400
Texas-La. Oil Co. No. 1 L. Morgan	1620	*
Texas Insterstate Oil Co. No. 3 Daniel	1300	100
Texas Ranger Oil & Ref. Co. No. 9 Brannon	1730	25
Thrift (No. 4) Oil Co. No. 9 Brannon	1700	75
Trinity Oil Corp. No. 1 Holtzen	1615	*
Uncle Joe Oil Co. No. 2 Evans	1650	25
United Drilling & Dev. Co. No. 2 Allen	1630	50
G. C. Woods No. 1 Snoddy	1460	*
G. C. Woods No. 6 Evans	1280	*
G. C. Woods No. 2 Snoddy	1405	*
G. C. Woods No. 9 Evans	1530	*
Waurika (No. 2) Oil Co. No. 2 Taylor	1670	*
Woodburn Oil Corp. No. 4 Evans	1545	15
Woodburn Oil Corp. No. 8 Evans	1555	10

ELECTRA SUMMARY FOR JUNE

Buffalo-Texas Oil Co. No. 3 Douglass	1050	35
McMahon Oil Co. No. 5 Waggoner	1150	*
McMahon Oil Co. No. 4 Burnett	1300	25
Magnolia Pet. Co. No. 44 H. & T. C.	1850	30
Rainbow Oil Co. No. 1 Fee	825	30
Van Avery et al No. 2 Jennings	1100	*
White Oil Corp. No. 1 Goetze	835	10

K-M-A SUMMARY FOR JUNE

Ard, Boger, Art & Haynes No. 3 Munger	1740	700
Ard, Boger, Art & Haynes No. 4 Munger	1740	500
Ard, Boger, Art & Haynes Synd. No. 3 Munger	1740	250
Ard, Boger et al Synd. No. 1 Munger	1745	300
Bill Rowe Oil Co. No. 1-A Munger	1805	*
Bill Rowe Oil Co. No. 1-B Munger	1845	*
Bill Rowe Oil Co. No. 1 Munger	1740	400
Bill Rowe Oil Co. No. 2 Munger	1745	500
Bass & Dillard No. 1 K. & K.	1775	200
Cline Oil Co. No. 1 Munger	1740	200
Cline Oil Co. No. 2 Munger	1745	800
Cline Oil Co. No. 2-B Munger	1750	*
Crude Oil Marketing Co. No. 2 Munger	1750	250
Crude Oil Marketing Co. No. 3 Munger	1755	350
Franklin et al No. 1 Munger	1740	250
Gulf Production Co. No. 2 Munger	1745	250
Gynn & Allen No. 1 Munger	1740	150
Hill & Roberts No. 1 Munger	1800	*
Hornbeak & Wade No. 1 Munger	1830	*
Humble Oil & Ref. Co. No. 1 Munger	2000	*
Keen & Woolf Oil Co. No. 2 Munger	1740	400
King Pet. Co. No. 1 Munger	1745	200
Panhandle Ref. Co. No. 1 Munger	1735	150
Prescott-Phoenix Oil Co. No. 1 Munger	1775	100
P. & P. Oil Co. No. 1 Munger	1760	200
Ryan Pet. Co. No. 1 Nance	1245	50
Sinclair Oil & Gas Co. No. 1 Munger	1990	*
Texas Chief Oil Co. No. 1 Munger	1740	500
Texas Chief Oil Co. No. 2 Munger	1745	600
Waggoner & Green No. 1-A Munger	1765	10

IOWA PARK SUMMARY FOR JUNE

Company and Well	Depth	Ini'ial Prod. in bbls
Bell & Evans No. 1 Parker	1340	25
Buffalo Texas Oil Co. No. 4 Douglas	1060	50
McMann Oil Co. No. 4 Waggoner Bros.	1510	25
W. M. Priddy No. 1 Jackson	2405	*
Sun Company No. 1 Overby	970	*
H. H. Temple No. 1 Parker	1340	25

NORTH TEXAS WILDCAT SUMMARY FOR JUNE

Big 1000 Acre Oil Co. No. 1 Wilson, Archer County	2000	*
Holliday Southeastern Oil Co. No. 1 Nesbitt, Archer County	700	*
Conner et al No. 1 Stephenson, Clay County	1400	*
Western Drilling Co. No. 1 Stephenson, Clay County	1330	*
Terra Blanca Oil Co. No. 1 Carroll, Deaf Smith County, location abandoned		
Big Six Oil Co. No. 1 Dunn, Montague County	700	*
Del Rio Pet. Co. No. 1 Shelton, Oldham County, location abandoned		
Lenox & Hester No. 1 Lastinslager, Oldham County	3500	*
L. Y. S. Oil Co. No. 1 Stein, Petrolia District	1800	*
National Project Co. No. 1 Nichelser, Wichita District	2050	*

NORTH TEXAS CONDENSED SUMMARY FOR JUNE

Field	Completions	Producers	Failures	Initial prod.	Monthly prod.
Burkburnett	164	111	53	18,985	2,557,500
Electra	7	5	2	130	311,250
Iowa Park*	36	27	9	5,435	93,900
Petrolia	1	..	1	....	12,300
Holliday	..	..	..	....	6,300
Wildcats	9	..	9	....	2,000
Totals	217	143	74	24,550	2,983,250

*This includes production from the K-M-A district.

*Salt water—abandoned.

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COASTAL SUMMARY FOR JUNE, 1920

WEST COLUMBIA SUMMARY FOR JUNE

Company and Well	Depth	Ini'ial Prod. in bbls
Humble Oil & Refining Co. No. 22 Japhet (W. O.)	3319	250
Texas Co. No. 13 Arnold	3020	175
Texas Co. No. 19 Hogg	2850	100
Gulf Production Co. No. 2 McMeans	3400	300
Gulf Production Co. No. 1 Masterson	2600	100
Sun Co. No. 1 McGregor	3167	65
The Texas Co. No. 1 Abrams	2618	*

HUMBLE SUMMARY FOR JUNE

Houston Production Co. No. 2 Satsuma	700	‡
Gulf Coast Oil Corp. No. 22 Fee	1150	60
Nebraska Oil & Ref. Co. No. 1 Crow	2365	*
Southern Pet. Co. No. 38 Landslide	1575	100
Texas Co. No. 15 Burt 50-acres	2894	‡
Gulf Coast Oil Corp. No. 24 Hermann	1150	60
Humble Lease & Dev. Co. No. 2 Jones	1290	†
Humble Oil & Ref. Co. No. 14 Wilson	916	10
Mint Oil Co. No. 1 Bender	970	10
Hester Bros. & Long No. 2 Hermann	1194	¶

BATSON SUMMARY FOR JUNE

Acorn Oil Co. No. 8 Paraffine	575	4
Ada Belle Oil Co. No. 7 Paraffine	360	2
East Batson No. 15 Hooks	580	5
Eagle Pet. Co. No. 3 Brown Williams	1200	20
Ada Bell Oil Co. No. 8 Paraffine	1000	10
Sun Co. No. 7 Hooks	1350	5

SOUR LAKE SUMMARY FOR JUNE

Texas Co. No. 138 Fee	1250	35
Texas Co. No. 138½ Fee	414	‡
Cromwell Oil Co. No. 1 Jackson	2620	40
Texas Co. 302 Fee	2760	25
Adams-Harris Oil Co. No. 1	1000	‡
M. C. Pevoto No. 4 Adel	780	40
M. C. Pevoto No. 5 Adel	1000	25

GOOSE CREEK SUMMARY FOR JUNE

Gulf Prod. Co. No. 12 Busch	3300	100
Sun Co. No. 1 Hoffman-Smith	2600	30
Gulf Coast Oil Corp. & Crown Oil & Refining Co. No. 26 Gaillard	3360	3000
Gulf Production Co. No. 25 Stateland	3320	1000
E. F. Simms & Co. No. 35 Smith	3546	75
Yakima Oil Co. No. 1 Demerritt	2880	*

SARATOGA SUMMARY FOR JUNE

Flatt Oil Co. No. 1 Wade	900	5
Sun Co. No. 146 Brice	970	‡
Sun Co. No. 147 Petty	1210	10
Flatt Oil Co. No. 1 Hopkins	1225	10
Regina Oil Co. No. 12 Cotton	1000	20
Rio Bravo Oil Co. No. B-114	1130	20
Gulf Production Co. No. 17 Tabor	900	200
Paggi Brothers No. 1 McShane	1150	15

HULL SUMMARY FOR JUNE

Gulf Production Co. No. 11 Phoenix	2300	1000
Yount-Lee No. 1 Eight Acre Tract	1950	200
Republic Production Co. No. 14 Dolbear	2960	‡
Texas Co. No. 1 Barngrover	2900	‡
Gulf Production Co. No. 3 Wilson	2300	60
Monarch Oil & Refining Co. No. 2 Hankamer-Peveto	2150	3500
Humble Oil & Ref. Co. No. 5 Palmer	2250	30
Humble Oil & Ref. Co. No. 7 Hankamer	1524	‡
Monarch Oil & Refining Co. No. 3 Hankamer-Pevoto	2090	400
Gulf Production Co. No. 7 Baldwin	2000	100
Texas Co. No. 1 Day Cantor	2250	250
The Texas Co. No. 3 Day Cantor	2410	300
The Mountain & Gulf No. 1 Stovall	1000	*
§Gulf-Texas No. 4 Morris Phillips	2500	†
Higgins Oil & Fuel Co. No. 4 Smith	2900	‡

§Produced one day. Drilling deeper.

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SAN ANTONIO SUMMARY FOR JUNE

Company and Well	Depth	Ini'ial Prod. in bbls
Grayburg Oil Co. No. 1 McCain	1585	7
Boynton Oil Co. No. 1 Carothers	1557	20
Witherspoon No. 1 Illa Carothers	1600	8
Gulf Production Co. No. 6 Carothers	1550	25
Grayburg Oil Co. No. 1 Foster	1900	3
Gulf Production Co. No. 5 Shaw	1400	35
Grayburg Oil Co. No. 2 Hartung No. 2	1450	6
Witherspoon No. 1 Tex-Carothers	1460	6

BLUE RIDGE SUMMARY FOR JUNE

West-Gulf No. 2 Luscher	2560	250*
Republic Production Co. No. 4 West	750	‡
Gulf Prod. Co. No. 2 Bassett-Blakely	2600	600

COASTAL WILDCATS SUMMARY FOR JUNE

Texas Exploration Co. No. 1 Whitehead Pierce Junction, Harris County	800	¶
Texas Co. No. 1 Cochrane & McClure, Stratton Ridge, Brazoria County	2375	‡
Dunlap-Delaney No. 1 Zooks near East Columbia, Brazoria County	3350	‡
E. F. Simms et al No. 2 Pruitt, northwest of Dayton, Liberty County	2067	500
E. F. Simms et al No. 3 Pruitt	1000	*
Gulf Production Co. No. 1 Kishi-Lang	3600	‡
Sun Co. No. 2 Cade, High Island, Galveston County	3000	‡
J. B. Hale Oil Co. No. 1 Wilkerson, near Fairbanks, Harris County	3220	‡
Garrett et al No. 1 Penn City, Harris Co.	2700	‡

BARBERS HILL SUMMARY FOR JUNE

Company and Well	Depth	Ini'ial Prod. in bbls
Walter Keeble (Trustee) No. 2 Gulf Production Co.	850	100

MARKHAM SUMMARY FOR JUNE

Lion Oil Co. No. 1 Myers (W. O.)	1500	20
Clem Oil Co. No. 15 Myers (W. O.)	1500	15

CONDENSED COASTAL SUMMARY FOR JUNE

Field	Completions	Producers	Failures	Initial prod.	Monthly prod.
Hull	15	9	6	5,840	299,700
Damon Mound	..	..	..	.....	100,500
West Columbia	7	6	1	990	524,700
Spindle Top	..	..	..	.....	23,700
Barbers Hill	1	1	..	100	11,250
Blue Ridge	3	2	1	850	4,200
Batson	6	6	..	46	36,000
Saratoga	8	7	1	280	61,500
San Antonio District	8	8	..	110	15,300
Goose Creek	6	5	1	4,205	451,110
Sour Lake	7	5	2	165	177,000
Humble	10	7	3	240	258,300
Markham	2	2	..	35	4,500
Coastal Wildcats	9	1	8	500	1,000
Totals	82	59	23	13,361	1,968,760

*Salt water—abandoned.
¶Million cubic feet gas.
†Dry and abandoned.
‡Junked and abandoned.

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LOUISIANA SUMMARY FOR JUNE, 1920

BULL BAYOU SUMMARY FOR JUNE

Company and Well	Depth	Ini'ial Prod. in bbls
Allison & Dingee No. 6 Nelson	1858	250
Avery et al No. 1 Johnson	2732	8¶
Belchic & Laskey No. 8 T. & P.	2794	350
Brazos River Oil Corp. No. 1 Goldsby	2610	20
Bull Bayou-Homer Oil Co. No. 14 Nelson	2791	200
Bull Bayou-Homer Oil Co. No. 5 Nelson	2795	135
Bull Bayou Oil Co. No. 13 Armistead	2760	50
Caddo Central Oil & Ref. Co. No. 3 Pugh	2949	*
Caddo Central O. & R. Co. No. 4 Nelson	2816	25
Continental Asphalt & Petroleum Co. No. B-2 Robinson	2797	400
Continental Asphalt & Petroleum Co. No. B-5 Robinson	2785	3¶
Ben Curtis et al No. 2 Globe Lbr. Co.	2990	†
Doan Oil Co. No. 2 Pugh	2775	100
Dominion Oil Co. No. 1 Hollingsworth	2750	15
Emerson & Noble No. 1 Hollingsworth	2200	†
Fortuna Oil Co. No. 29 Pugh	2745	55
Fortuna Oil Co. No. 30 Pugh	2720	40
Giles & Herring No. 1 Shaffer	2779	12¶
Gilliland Oil Co. No. 1 A Nelson		35
Gilliland Oil Co. No. 5 Nelson	2785	25
Gilliland Oil Co. No. 6 Nelson	2785	85
Gilliland Oil Co. No. 7 Nelson	2790	50
Gilliland Oil Co. No. 8 Nelson	2656	‡
Gilliland Oil Co. No. 13 Pugh	2740	35
Gilliland Oil Co. No. 14 Pugh	2749	25
Lincoln Oil Co. No. 2 Hollingsworth	2900	1½¶
Morefield et al No. 1 Nelson	2800	15
Shaffer Oil & Ref. Co. No. 3 Robinson	2750	30
Texas-Ranger Oil Co. No. 1 Robinson	2840	20

CADDO SUMMARY FOR JUNE

Ackerman Oil Co. No. 1 Muslow	2190	20-2¶
Dixie Oil Co. No. 28 Robertshaw	2331	75
Dixie Oil Co. No. 30 Robertshaw	2338	125
Dixie Oil Co. No. 31 Robertshaw	2382	100
J. W. Dickerson No. 22 Jolly	1020	40
Globe Oil Co. No. 10 Noel	2295	40
Greer Oil Co. No. 23 Jolly	1050	25
Lincoln Prod. Co. No. 3 Looney	2270	10
Red River Leasing & Holding Co. No. 1 Wenzell	2420	15
Republic Oil & Gas Co. No. 4 Hardy	2230	35
The Texas Co. No. 10B W. E. Noel	2490	35

CLAIBORNE SUMMARY FOR JUNE

Ark. Natural Gas Co. No. 126 Guy Shaw	2450	*
Ark. Natural Gas Co. No. 130 Guy Shaw	1398	50
Ark. Natural Gas Co. No. 128 Langston	2685	†
Ark. Natural Gas Co. No. 131 Shaw	1420	30
Blackwell Oil Co. No. 1 J. A. Palmer	2230	†
Bowie-Claiborne Oil Co. No. 7 Featherstone	1200	1200
Caddo Cent. Oil & Ref. Co. No. 1 Manning	2555	†
Dominion Oil Co. No. 1 Featherstone	2220	†
Freedman & Rowe No. 2 Hardy	1450	30
Frost Oil Co. No. 9 Chatman	2080	175
Gilliland Oil Co. No. 10 Shaw	1356	100
Gilliland Oil Co. No. A-10 Shaw	2050	1000
Gilliland Oil Co. No. 14 Oakes	1390	60
Gilliland Oil Co. No. D-2 Shaw	1428	70
Gilliland Oil Co. No. D-7 Shaw	1383	50
Gilliland Oil Co. No. 11 Jackson	1230	160
Gilliland Oil Co. No. 16-A Shaw	2076	1600
Gilliland Oil Co. No. 17-A Shaw	1360	1100
Gulf Ref. Co. No. 8 Langston	1380	2500
Gulf Ref. Co. No. 13 West	1400	1100
Gulf Ref. Co. No. 15 Langston	2706	†
Gulf Ref. Co. No. 23 Langston	1335	1100
Gulf Ref. Co. No. 24 Langston	1150	400
Gulf Ref. Co. No. 16 Langston	1270	600
Gulf Ref. Co. No. 25 Langston	1255	600
Gulf Ref. Co. No. 22 Langston	1286	1000
F. C. Henderson No. 3 Garrett	1383	1000
F. C. Henderson No. 4 Garrett	1390	600
F. C. Henderson No. 8 Garrett	1410	750
Homer Amalgamated Oil Co. No. 1 Kennebrew	2555	†
Homer Oil & Ref. Co. No. 1 Mitchell	2200	*
La. Oil Ref. Corp. No. 23 Jackson	1372	3000
Ohio Fuel Oil Co. No. 6 Norton	1442	†
Paramount Pet. Co. No. 1 Sanders	2205	*
Paramount Pet. Co. No. 5 Shaw	2085	550
Paramount Pet. Co. No. 8 Shaw	1430	75
Rebel Oakes Leasing Co. No. 1 Gillis	2163	*
Romaine et al No. 1 Chrichton	45	†
Rowe Oil Corp. No. 2 Wilson	1605	†
Rowe Oil Corp. No. 3 Wilson	1751	†
Simms Oil Co. No. 1 Garrett	1425	700
Simms Oil Co. No. 2 Garrett	1386	200
Simms Oil Co. No. 3 Garrett	1365	1100
Simms Oil Co. No. 4 Garrett	1390	500
Simms Oil Co. No. 2 McClung	2138	200
Sinclair Oil Co. No. 7 Oakes	1410	75
Standard Oil Co. No. 5 Herold-Palmer	1250	500
Standard Oil Co. No. 2 Mitchell-Palmer	1459	25
Standard Oil Co. No. 11 Palmer-Langston	1400	2500
Standard Oil Co. No. A-4 Shaw-Palmer	2043	*
Standard Oil Co. No. A-6 Shaw-Palmer	1320	100
Standard Oil Co. No. 8 Shaw-Palmer	1424	250
Standard Oil Co. No. 1 Featherstone	1515	†
Standard Oil Co. No. 8 Langston	1105	250
Standard Oil Co. No. 9 Langston	1110	300

CLAIBORNE SUMMARY—Continued.

Company and Well	Depth	Ini'ial Prod. in bbls
Standard Oil Co. No. 13 Langston	1215	†
Standard Oil Co. No. 13 Lowenberg	1424	500
Standard Oil Co. No. 18 Lowenberg	1390	110
Standard Oil Co. No. 22 Lowenberg	1400	50
Standard Oil Co. No. 1 Wheeler	1399	1000
The Texas Co. No. B-4 Langston	1404	10
United Okla Oil & Gas Co. No. 1 Shaw	1420	80
United Okla Oil & Gas Co. No. 2 Shaw	1390	30
Vanada Oil Co. No. 11 Langston	1196	600
Victor Oil & Gas Co. No. 1 Langston	1535	†
White Oil Corp. No. 4 Oakes	2042	250
White Oil Corp. No. 9 Oakes	1405	225
White Oil Corp. No. 13 Oakes	1390	225
Wonderfield Oil Corp. No. 2 Featherstone	1355	325

NORTH LOUISIANA WILDCAT SUMMARY FOR JUNE

Bossier—Louisiana Gas & Fuel Co. No. 4 Caplis	830	15¶
Bienville—Gartland et al No. 1 Frey		‡
Bossier—Texas Co. No. 2 Moyersands	2480	2¶
Evangeline—Price & Campbell No. 1 Duson	3040	‡
Evangeline—Price & Compbell No. 1 Fuselier	3775	†
St. Martins—Apex Oil Co. No. 1 Moreisei	890	20
Calcasieu—Gulf Refining Co. No. 32 Bright Farm	2510	1000
Calcasieu—Gulf Refining Co. No. 50 G. N. Gray	2510	60
Webster—Norris & Derryberry No. 1 Miller	310	‡
Bossier—Arkansas Natural Gas Co. No. 127 Glidden	2605	‡
Calcasieu—Victor Oil Co. No. 13 Lilliard	2485	12
Morehouse—Southern Carbon Co. No. 5 Spyker	2240	5½¶
Ouachita—Flourshiem et al No. 1 West Virginia Lumber Co.	2090	15¶
Allen—Kribbs & Mounts No. 1 Nixon	3320	‡
Bienville—Early Oil Co. No. 1 Calhoun	2620	‡
Bossier—Louisiana Gas & Fuel Co. No. 2 Crawford Jenkins & Booth	2525	4¶
Jeff Davis—Jennings & Laurel No. 1 Berl	2390	‡
Ouachita—Stovall et al No 1 Stovall	2105	14¶
St. Martins—I. A. Mabry & Co. No. 1 Atchafalaya Oil Co.	595	‡

NORTHEAST TEXAS WILDCAT SUMMARY FOR JUNE

Franklin County—McNeese & Southern No. 1 Stanton	2920	‡
Panola County—National Oil & Gas Co. No. 1 Nails	3415	‡

NORTH LOUISIANA CONDENSED SUMMARY FOR JUNE

Field	Completions	Producers	Failures	Initial prod.	Monthly prod.	Company and Well Depth	Ini'ial Prod. in bbls
Bull Bayou	29	25	4	1,960	588,750		
Caddo	11	11	..	520	493,000		
Claiborne	69	51	18	29,005	2,354,250		
Wildcats	19	10	9	*1,092	5,000		
Totals	128	97	31	32,577	3,441,000		

*Also 55,500,000 cubic feet of gas.

SOUTH LOUISIANA

EVANGELINE SUMMARY FOR JUNE

Gulf Refining Co. No. 4 G. F. S.	2000	5

VINTON SUMMARY FOR JUNE

Gulf Refining Co. No. 50 G. & G.	2400	25
Gulf Refining Co. No. 16 Vincent	2500	150
Vinton Petroleum Co. No. 16 Gray	2450	75

EDGERLY SUMMARY FOR JUNE

Gulf Refining Co. No. 32 Bright-Penn	3160	400
Great Southern Oil Co. No. 3 Reed	2000	20

SOUTH LOUISIANA CONDENSED SUMMARY FOR JUNE

Field	Completions	Producers	Failures	Initial prod.	Monthly prod.
Edgerly	2	2	..	420	34,500
Vinton	3	3	..	250	104,340
Evangeline	1	1	..	5	18,900
Totals	6	6		675	157,740

*Salt water—abandoned.
¶Million cubic feet gas.
†Dry and abandoned.
‡Junked and abandoned.

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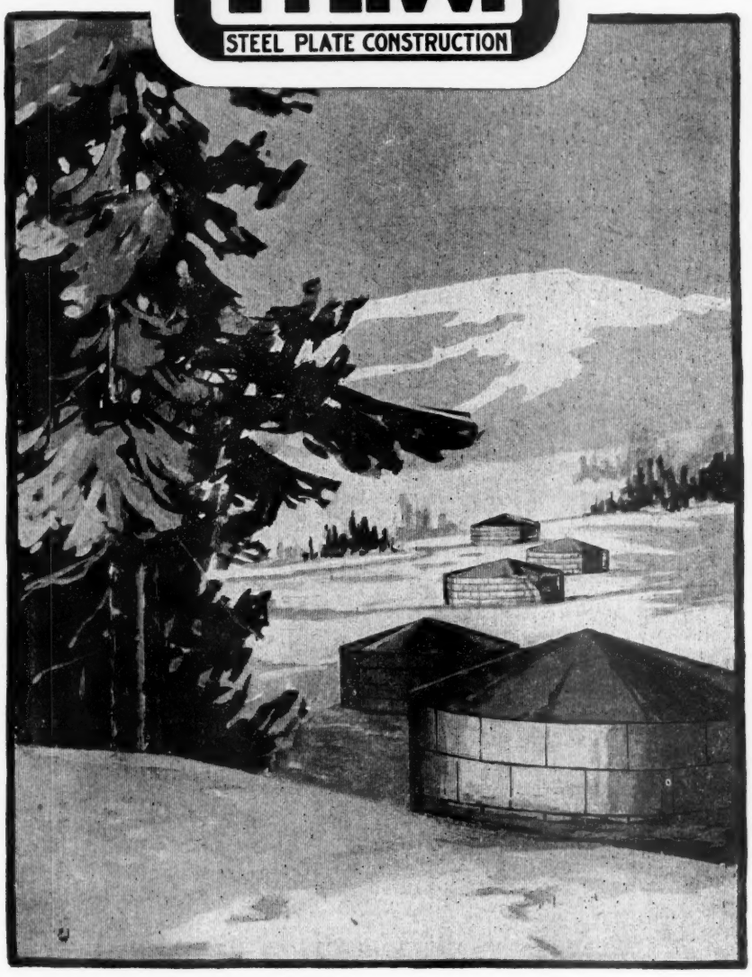

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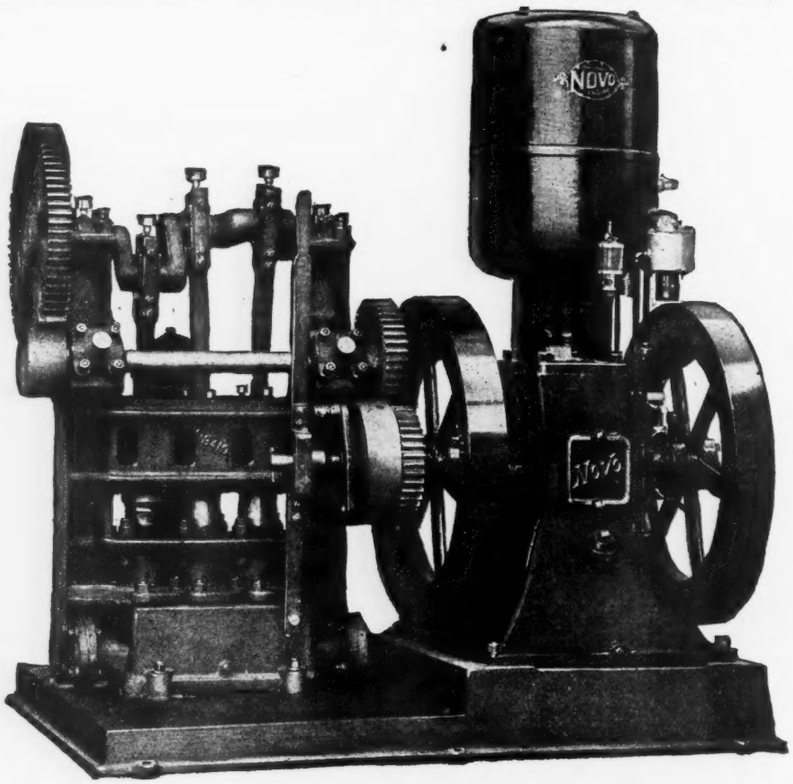

Novo Triplex Pumping Outfit

24-Hour-a-Day Pumping Power

You can call on a Novo Pumping Outfit to run 24 hours a day, and it will not disappoint you.

Many oil men have proved this.

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NOVO RELIABLE POWER

Another Decrease in Drilling Wells in Texas

THERE were fewer drilling wells and rigs in the state of Texas at the end of June, when compared with a similar period thirty days ago, but the decrease came from the proven fields. Among the wildcats, new work is on the increase, as every division of the state shows a gain in drilling wells, although in some instances the number of locations were less.

The figures for the end of June were 2345 drilling wells, against 2448 wells thirty days ago. The rigs number 564, aaginst 645, while the locations number 246 against 468.

In Louisiana there was an increase in the number of rigs and a decrease in the number of drilling wells. The figures at the end of June were 492 drilling wells, 152 rigs and 101 locations.

The following tables give the number of drilling wells, rigs and locations in detail:

TEXAS RECAPITULATION

	Drilling Wells	Rigs	Locations
North Texas Fields	441	76	23
Coastal Fields	209	12	22
Central West Texas Fields	833	322	110
North Texas Counties	224	28	13
Panhandle Counties	62	10	5
Central West Texas Counties.	300	69	23
Coastal Counties	209	18	45
East Texas Counties	67	29	5
Total	2345	564	246

NORTH TEXAS FIELDS

Northwest Burkburnett	208	27	10
Burkburnett Vicinity	117	24	6
Kemp-Munger-Allen	77	19	5
Electra	39	6	2
Totals	441	76	23

CENTRAL WEST TEXAS FIELDS

Stephens County	543	154	59
Ranger District	157	81	39
Desdemona	133	87	12
Totals	833	322	110

COASTAL FIELDS

Sour Lake	6	1	
Saratoga	8		
Spindle Top	4		3
West Columbia	40		12
Barbers Hill	3	1	2
Goose Creek	50	4	
Hull	50	5	3
Vinton	6		
Edgerly	4		
Evangeline	1		
Batson	5		
Markham	3		1
Humble	15		2
Blue Ridge	7		1
Damon Mound	7	1	
Total	209	12	22

NORTH TEXAS COUNTIES

Archer-Holliday	22	1	1
Baylor County	9	1	1
Childress County	8		1
Clay County	36	1	
Cooke County	5	1	
Collin County	1		
Denton County		1	
Dickens County	2		
Foard County	3		
Grayson County	8	3	
Hardeman County	13	1	
Haskell County	5	1	
Jack County	5	1	
Knox County	2	1	2
Montague County	4		
Petrolia District	6	1	
Stonewall County	2	1	
Throckmorton County	3	1	3
Wichita County	7	1	
Wilbarger County	51	18	3
Wise County	7	2	
Young County	25	2	2
Totals	224	38	13

Much New Work Is Reported Among the Wildcats

PANHANDLE COUNTIES

	Drilling Wells	Rigs	Locations
Armstrong County	1		1
Carson County	2		
Castro County	3		
Collingsworth County	3	1	
Cottle County	1	1	
Dallam County	3	1	
Deaf Smith County	2		1
Conley County	8	2	
Hall County	4	1	
Hartley County	3		1
Hemphill County	2		
Hutchinson County	2	1	
Lipscomb County	1		1
Moore County	3		
Motley County	1	1	
Ochiltree County	1		
Oldham County	6	1	
Palmer County	10		
Potter County	9	1	1
Randall County	2		
Roberts County	2		
Swisher County	2		
Wheeler County	1		
Totals	62	10	5

CENTRAL WEST TEXAS COUNTIES

Anderson County	1	1	
Andrews County		1	
Brown County	11	2	
Burnett County	1		
Borden County	2		
Bell County	5		1
Bosque County	3	3	
Brewster County	7		
Coryell County	3		2
Crockett County	1	3	1
Callahan County	18	4	
Coke County	6	1	1
Coleman County	15	4	1
Concho County	3	1	1
Culbertson County	2		
Dawson County	1		
Erath County	7	7	
El Paso County	1		
Freestone County	1		
Fisher County	8	2	
Glasscock County	3		
Garza County	4		
Howard County	4		
Hamilton County	4		
Hudspeth County	2		
Hood County	5		
Henderson County	1		
Hill County	2		
Irion County	1		
Jones County	3	1	
Johnson County	2	1	
Kent County	1		
Kaufman County	1	1	
Limestone County	3		
Lampasas County	9		
Loving County	1		
McCulloch County	7	2	
Mills County	5	1	
Mitchell County	4		
Menard County	3	3	3
Midland County	1		1
Martin County		1	
Milam County	4	2	
McLennan County	4	1	1
Mason County	1		
Nolan County	6	1	
Navarro County	6		
Palo Pinto County	26	9	
Parker County	4	4	
Pecos County	6		2
Presidio County	1		
Runnels County	8		
Reeves County	14	3	2
San Saba County	3		
Scurry County	3	2	
Shackleford County	16	1	2
Sterling County	1	1	1
Starr County	5		
Taylor County	6	2	1
Tom Green County	3		
Terrell County	1	1	
Tarrant County	4		
Uvalde County	5		
Van Zandt County	2		
Williamson County	1		
Ward County	3	1	
Somerville County	1	2	
Kimble County	4		3
Totals	300	69	23

COASTAL COUNTIES

	Drilling Wells	Rigs	Locations
Angelina County	2	1	
Aransas County	1		
Atacosa County	12		
Bexar County	18	6	2
Brazos County	2		
Brazoria County	13	2	2
Bastrop County	3	1	
Bell County	8	3	8
Brewster County	6		4
Brooks County	1		
Cameron County	2		
Caldwell County	3		2
Coke County	5		
Concho County	3	1	
Coryell County	3	1	
Crockett County	4		1
Duvall County	5		1
Edwards County	2		1
Fort Bend County	1		
Gillespie County	1		
Galveston County			
Glasscock County	2	2	2
Grimes County	2		
Gonzales County	4		3
Guadalupe County	3		
Hays County	1		
Harris County	20		
Hidalgo County	2		
Jefferson County	1		
Jackson County	4	1	
Kerr County	1		
Kimball County	3		1
Kinney County	2		1
Live Oak County	1		1
Liberty County	12		2
Maverick County	4		1
McCulloch County	5		2
Medina County	4		
Refugio County	1		
Runnels County	4		
San Patricio County	2		
Starr County	6		2
Tom Green County	2		
Travis County	4		
Uvalde County	5		2
Victoria County	1		
Walker County	1		1
Webb County	5		2
Williamson County	4		2
Wilson County	3		
Zavalla County	4		2
Total	209	18	45

NORTH LOUISIANA

Fields	365	116	91
Wildcats	127	36	10
Totals	492	152	101

NORTH LOUISIANA FIELDS

Caddo	47	20	4
Claiborne	175	60	30
Bull Bayou	143	36	57
Totals	365	116	91

NORTH LOUISIANA WILDCATS

Allen Parish	1		
Beauregard Parish	1		1
Bienville Parish	13	3	
Bossier Parish	19	3	2
Caldwell Parish	1	1	
Cameron Parish	1		
Calcasieu Parish	12	2	
Grant Parish	3	2	
Jackson Parish	4	2	
Jeff Davis Parish	3	2	1
Iberville Parish	1		
La Fourche Parish	1		
La Salle Parish	3		
Lincoln Parish	5	2	
Moorehouse Parish	7	2	1
Natchitoches Parish	4	1	1
Ouachita Parish	7	5	2
Orleans Parish	2		
Rapides Parish	4	2	
Richland Parish	1		
Sabine Parish	7	2	
St. Landry Parish	1		
St. Martin Parish	5	2	
Terrebonne Parish	2		
Union Parish	4	2	1
Vernon Parish	3	1	
Webster Parish	11	2	1
Winn Parish	1		
Total	127	36	10

(Continued on Page 52.)

Southwestern Crude Prices for Past 12 Years

The following table showing the various changes of price in Mid-Continent, Texas and Louisiana crude oil prices covering the past twelve years, should be of considerable value to oil companies in figuring depletion as well as for the historical value it possesses.

The table was compiled by Henry Arnold, in charge of the statistical department of the Humble Oil & Refining Company, and represents the result of about four years' work.

GOOSE CREEK

1917	
January 15	$1.00
April 15	.90
October 1	1.00
1918	
February 15	1.35
August 1	1.80*
1919	
January 14	1.50
February 14	1.25
March 22	1.00
November 29	1.25
December 20	1.50
1920	
January 6	1.75
February 18	2.00
March 2	2.25
March 4	2.50
April 13	3.00

*Oil Division U. S. Fuel Administration.

WEST COLUMBIA

1919	
April 30	.75
November 29	1.00
December 20	1.25
December 22	1.50
1920	
January 6	1.75
February 18	2.00
March 2	2.25
March 4	2.50
April 13	3.00

HULL

1920	
February 18	2.00
March 2	2.25
March 4	2.50
April 13	3.00

SPINDLE TOP

1913	
January 1	1.00
1914	
April 1	.75
April 10	.65
April 20	.55
July 20	.50
August 20	.45
1915	
August 3	.55
December 20	.65
1916	
March 13	.85
July 25	.70
August 1	.85
August 8	1.05
1917	
1918	
February 15	1.40
August 1	1.80
1919	
January 16	1.55
February 4	1.25
March 19	1.00
November 29	1.25
December 20	1.50
1920	
January 6	1.75
February 19	2.00
March 3	2.25
March 4	2.50
April 13	4.00

BATSON

1913	
January 1	1.00
July 1	1.07⅞
December 10	1.00
1914	
April 1	.70
April 10	.60
April 20	.50
July 20	.45
August 20	.40
1915	
August 3	.50
1916	
January 1	.60
March 15	.80
July 25	.65
August 1	.80
August 8	1.00
1917	
1918	
February 15	1.35
August 1	1.80
1919	
January 16	1.50
February 4	1.25
March 19	1.00
November 29	1.25
December 20	1.50
1920	
January 6	1.75
February 19	2.00
March 3	2.25
March 4	2.50
April 13	3.00

SARATOGA

1913	
January 1	$1.00
1914	
April 1	.70
April 10	.60
April 20	.50
July 20	.45
August 20	.40
1915	
August 3	.50
1916	
March 15	.80
July 25	.65
August 1	.70
August 8	.90
August 16	1.00
1917	
1918	
February 15	1.35
August 1	1.80
1919	
January 14	1.50
February 4	1.25
March 20	1.00
November 29	1.25
December 20	1.50
1920	
January 6	1.75
February 19	2.00
March 3	2.25
March 4	2.50
April 13	3.00

DAYTON

1913	
January 1	.85
1914	
April 1	.60
April 20	.50
May 10	.40
1915	
August 3	.50
1916	
January 1	.60
June 15	.80
August 1	.70
August 8	.90
August 16	1.00
1918	
February 15	1.35
August 1	1.80
1919	
January 14	1.50
February 4	1.25
March 20	1.00
November 29	1.25
December 20	1.50
1920	
January 6	1.75
February 19	2.00
March 2	2.25
March 4	2.50
April 13	3.00

THRALL

1915	
August 3	.55
August 6	.60
August 12	.65
August 19	.70
August 27	.75
November 15	.95
December 14	1.05
1916	
January 25	1.25
January 27	1.30
March 13	1.45
March 14	1.55
July 25	1.45
August 1	1.35
August 2	1.25
August 8	1.15
August 14	1.05
August 16	.95
August 26	.90
November 29	1.00
December 12	1.10
December 18	$1.20
December 27	1.30
December 29	1.40
1917	
January 3	1.50
January 8	1.60
January 13	1.70
August 16	1.90
August 20	2.00
1918	
March 20	2.25
1919	
December 18	2.50
December 23	2.75
1920	
January 6	3.00
February 27	3.25
March 1	3.50

SOUR LAKE

1913	
January 1	1.00
July 1	1.07⅞
December 10	1.00
1914	
March 10	.95
April 1	.70
April 10	.60
April 11	.50
July 20	.40
1915	
July 27	.50
December 20	.60
1916	
January 27	.80
March 14	.70
July 25	.65
August 1	.80
August 8	1.00
1917	
November 1	1.25
1918	
February 15	1.35
August 1	1.80
1919	
January 14	1.50
February 14	1.25
March 22	1.00
November 29	1.25
December 20	1.50
1920	
January 6	1.75
February 19	2.00
March 3	2.25
March 4	2.50
April 13	3.00

JENNINGS

1913	
January 10	.90
July 1	1.10
1914	
January 20	1.00
March 10	.95
April 1	.70
April 10	.60
April 20	.50
July 20	.45
1916	
January 1	.55
January 4	.65
December 8	.80
December 30	1.00
1917	
1918	
February 15	1.35
August 1	1.80*
1919	
January 14	1.50
February 14	1.25
March 22	1.00
November 29	1.25
December 20	1.50
1920	
January 6	1.75
February 19	2.00
March 2	2.25
March 4	2.50
April 13	3.00

*Oil Division U. S. Fuel Administration.

VINTON

1913	
January 10	$0.90
1914	
January 20	1.00
March 10	.95
April 1	.70
April 10	.60
April 20	.50
July 20	.45
1915	
August 3	.60
December 20	.70
1916	
January 4	.80
July 14	.70
July 27	.65
December 8	.80
December 30	1.00
1917	
1918	
February 15	1.35
August 1	1.80*
1919	
January 14	1.50
February 14	1.25
March 22	1.00
November 29	1.25
December 20	1.50
1920	
January 6	1.75
February 19	2.00
March 2	2.25
March 4	2.50
March 13	3.00

*Oil Division U. S. Fuel Administration.

VIVIAN

1913	
January 10	.70
July 1	.75
1914	
March 10	.70
April 20	.50
August 20	.45
1915	
September 1	.40
September 15	.45
October 7	.55
November 19	.65
December 14	.75
1916	
January 1	.80
February 1	.90
July 14	.80
July 27	.65
December 8	.75
December 20	.85
1917	
April 1	1.00
1918	
February 15	1.35
August 1	1.80*
1919	
January 14	1.50
February 14	1.25
March 22	1.00
November 29	1.25
December 20	1.50
1920	
January 6	1.75
February 19	2.00
March 2	2.25
March 4	2.50
April 13	3.00

*Oil Division U. S. Fuel Administration.

CRICHTON

1915	
July 14	.45
July 15	.35
August 27	.45
September 15	.50
September 22	.55
October 7	.60
November 19	.70
November 20	.80
December 17	.85
1916	
January 25	.90
January 28	.95
March 8	1.00
June 10	.90
June 21	.80
July 14	.70
July 27	.65
August 29	.60
December 1	.70
December 12	.80
December 18	.90
December 26	1.00
December 29	1.10
1917	
January 3	1.20
January 8	1.30
February 15	1.40
August 22	1.50
1918	
March 20	1.75

CRICHTON—Continued.

1919
December 20 ..... $2.00
December 23 ..... 2.25
1920
January 6 ..... 2.50
February 27 ..... 2.75
March 16 ..... 3.00

DE SOTO

1914
August 8 ..... .90
August 12 ..... .85
September 1 ..... .80
1915
February 19 ..... .70
March 3 ..... .60
March 24 ..... .50
August 27 ..... .55
September 15 ..... .60
September 22 ..... .65
October 7 ..... .70
November 19 ..... .80
November 20 ..... .90
December 17 ..... 1.00
December 20 ..... 1.10
1916
January 25 ..... 1.15
January 28 ..... 1.20
March 8 ..... 1.30
March 15 ..... 1.35
March 27 ..... 1.45
July 26 ..... 1.35
August 1 ..... 1.25
August 2 ..... 1.15
August 8 ..... 1.05
August 14 ..... .95
August 16 ..... .85
August 26 ..... .80
November 29 ..... .90
December 12 ..... 1.00
December 18 ..... 1.10
December 26 ..... 1.20
December 29 ..... 1.30
1917
January 3 ..... 1.40
January 8 ..... 1.50
January 13 ..... 1.60
August 22 ..... 1.90
1918
March 20 ..... 2.15
March 23 ..... 2.65
1920
January 6 ..... 2.90
February 27 ..... 3.15
March 16 ..... 3.40

CADDO

1913	Light	Heavy
January 1	.91	.70
January 10	.93	
February 1	.98	
July 1		.75
July 10	1.00	
September 1	1.05	
1914		
March 10		.70
April 1		.60
April 20		.50
July 9	1.00	
July 28	.95	
August 12	.85	
August 8		.45
September 1	.80	
1915		
February 19	.70	
March 25		.35
August 27	.65	.40
September 15	.70	.45
September 22	.75	.50
October 7	.80	.55
November 11	.90	.65
November 20	1.00	
December 14		.75
December 17	1.10	
December 28	1.20	
1916		
January 25	1.25	.85
January 28	1.30	.90
March 8	1.40	
March 15	1.45	
March 27	1.55	
July 14		.80
July 26	1.45	.70
July 27		.65
August 1	1.35	
August 2	1.25	
August 8	1.15	
August 14	1.05	
August 16	.95	
August 26	.90	
November 29	1.00	
December 12	1.10	
December 14		.75
December 18	1.20	
December 26	1.30	
December 27		.85
December 29	1.40	
1917		
January 3	1.50	
January 8	1.60	
January 13	1.70	
March 15	1.80	1.00
April 1	1.90	
August 22	2.00	
1918		
March 20	2.25	1.25
August 1		1.55

CADDO—Continued.

1919
January 16 ..... $1.25
February 6 ..... 1.00
March 24 ..... .75
December 20 ..... 2.50 1.00
December 23 ..... 2.75 1.25
1920
January 6 ..... 3.00 1.50
February 27 ..... 3.25 1.75
March 16 ..... 3.50 2.00

HUMBLE

1913
January 1 ..... 1.00
1914
March 10 ..... .95
April 1 ..... .70
April 10 ..... .60
April 20 ..... .50
July 20 ..... .40
1915
July 29 ..... .50
December 20 ..... .60
1916
January 27 ..... .80
March 14 ..... .70
July 25 ..... .65
August 1 ..... .80
August 8 ..... 1.00
1917
1918
February 14 ..... 1.35
August 1 ..... 1.80*
1919
January 14 ..... 1.50
February 14 ..... 1.25
March 22 ..... 1.00
November 29 ..... 1.25
December 20 ..... 1.50
1920
January 6 ..... 1.75
February 19 ..... 2.00
March 3 ..... 2.25
March 4 ..... 2.50
March 13 ..... 3.00
*Oil Division U. S. Fuel Administration.

MID-CONTINENT—KANSAS AND OKLAHOMA

1913
January 10 ..... .83
February 1 ..... .88
July 10 ..... .93
July 22 ..... .98
September 1 ..... 1.03
1914
February 10 ..... 1.05
April 8 ..... 1.00
April 10 ..... .95
April 13 ..... .90
April 15 ..... .85
April 27 ..... .80
April 30 ..... .75
September 12 ..... .65
September 22 ..... .55
1915
February 8 ..... .45
February 15 ..... .40
August 3 ..... .50
August 4 ..... .55
August 11 ..... .60
August 21 ..... .75
September 11 ..... .80
November 13 ..... .90
November 15 ..... 1.00
December 14 ..... 1.20
1916
January 20 ..... 1.25
January 26 ..... 1.30
March 4 ..... 1.40
March 11 ..... 1.45
March 14 ..... 1.55
July 25 ..... 1.45
July 29 ..... 1.35
August 1 ..... 1.25
August 7 ..... 1.15
August 12 ..... 1.05
August 15 ..... .95
August 26 ..... .90
December 12 ..... 1.10
December 18 ..... 1.20
December 23 ..... 1.30
December 28 ..... 1.40
1917
January 3 ..... 1.50
August 15 ..... 1.90
August 18 ..... 2.00
1918
March 19 ..... 2.25
1919
November 20 ..... 2.50
December 20 ..... 2.75
1920
January 6 ..... 3.00
February 27 ..... 3.25
March 1 ..... 3.50

HEALDTON

1914
March 26 ..... .70
April 13 ..... .60
May 1 ..... .50
October 1 ..... .40
October 20 ..... .50
1915
February 15 ..... .30
September 25 ..... .35
October 12 ..... .40
November 1 ..... .45
December 1 ..... .55
December 14 ..... .60

HEALDTON—Continued.

1916
January 26 ..... $0.75
March 4 ..... .80
July 26 ..... .70
July 29 ..... .60
August 1 ..... .50
August 15 ..... .45
December 12 ..... .50
December 19 ..... .60
December 23 ..... .70
December 28 ..... .75
1917
January 4 ..... .80
August 15 ..... 1.15
August 18 ..... 1.20
1918
March 16 ..... 1.45
1919
February 21 ..... 1.20
November 21 ..... 1.35
December 20 ..... 2.00
1920
January 6 ..... 2.25
February 27 ..... 2.50
March 3 ..... 2.75

CUSHING—Above 38 Gravity
(Also Hominy Crude of same grade)

1917
January 15 ..... 1.95
August 15 ..... 2.15
August 18 ..... 2.25
1918
March 19 ..... 2.50
1919
December 20 ..... 2.75
1920
January 6 ..... 3.00
February 27 ..... 3.25
March 1 ..... 3.50

NORTH TEXAS DIVISION

1911
January 1 ..... .55
August 1 ..... .48
September 15 ..... .50
1912
January 2 ..... .53
January 15 ..... .55
January 27 ..... .57
February 5 ..... .60
April 19 ..... .65
May 7 ..... .66
May 17 ..... .68
July 1 ..... .70
July 15 ..... .72
July 20 ..... .75
November 15 ..... .80
December 14 ..... .85
December 26 ..... .88
1913
January 9 ..... .90
January 29 ..... .95
July 24 ..... 1.00
August 25 ..... 1.05
1914
April 14 ..... .95
April 20 ..... .85
May 5 ..... .75
September 22 ..... .65
October 6 ..... .60
November 21 ..... .55
1915
April 1 ..... .45
August 3 ..... .55
August 6 ..... .60
August 13 ..... .65
August 20 ..... .70
August 27 ..... .75
September 14 ..... .80
November 13 ..... .90
November 15 ..... 1.00
December 14 ..... 1.20
1916
January 21 ..... 1.25
January 27 ..... 1.30
March 4 ..... 1.40
March 13 ..... 1.45
March 14 ..... 1.55
July 14 ..... 1.45
August 1 ..... 1.35
August 2 ..... 1.25
August 8 ..... 1.15
August 14 ..... 1.05
August 16 ..... .95
August 26 ..... .90
August 29 ..... 1.00
December 12 ..... 1.10
December 18 ..... 1.20
December 23 ..... 1.30
December 29 ..... 1.40
1917
January 3 ..... 1.50
January 8 ..... 1.60
January 13 ..... 1.70
August 17 ..... 1.90
August 20 ..... 2.00
1918
March 20 ..... 2.25
1919
November 20 ..... 2.50
December 20 ..... 2.75
1920
January 6 ..... 3.00
February 27 ..... 3.25
March 1 ..... 3.50

BIG MUDDY (Wyoming)

1917
March 15 ..... .95
October 15 ..... 1.15
December 31 ..... 1.20
1918
February 12 ..... $1.30
March 21 ..... 1.50
1919
November 21 ..... 1.75
December 23 ..... 2.00
1920
January 13 ..... 2.25
March 2 ..... 2.50
March 16 ..... 2.75

MARKHAM

1913
January 1 ..... .90
1914
March 10 ..... .85
April 1 ..... .70
April 10 ..... .60
April 20 ..... .50
July 20 ..... .45
1915
April 1 ..... .50
December 20 ..... .60
1916
January 25 ..... .70
July 25 ..... .65
1917
January 1 ..... .75
February 15 ..... 1.00
1918
February 15 ..... 1.35
August 1 ..... 1.80
1919
January 14 ..... 1.50
February 14 ..... 1.25
March 22 ..... 1.00
November 29 ..... 1.25
December 20 ..... 1.50
1920
January 6 ..... 1.75
February 19 ..... 2.00
March 3 ..... 2.25
March 4 ..... 2.50
April 13 ..... 3.00

CORSICANA

1913	Light	Heavy
January 1	.88	.70
January 10	.90	
February 1	.95	
April 15		.80
Auugst 1	1.00	
September 1	1.05	
1914		
March 10		.70
April 10		.60
April 20	.85	
May 1		.50
May 10	.75	
October 1	.75	
October 20	.60	
November 15	.55	
1915		
March 1	.45	.40
August 3	.55	
August 15	.65	
September 1	.75	
September 15	.80	
October 15	1.00	
December 1		.55
December 14	1.20	
1916		
January 1		.60
January 15		.65
February 1	1.25	.75
February 15	1.30	
March 15	1.55	
April 1		.80
July 15	1.45	
August 1	1.25	.60
August 15	.95	
September 1	.90	
September 15		.40
December 1	1.00	.50
1917		
January 1	1.40	
January 15	1.70	.85
October 1	2.00	1.05
1918		
March 20	2.25	1.30
1919		
February 21		1.05
November 21		1.15
December 18	2.50	
December 23	2.75	1.30
1920		
January 6		1.55
March 1	3.00	1.75

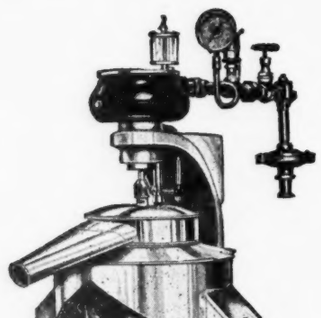
HOMER

1919	38°+	35°+	32°+	32°—
May 2	2.15	2.15		
June 5	2.25	2.15	2.15	.75
August 8			2.10	1.00
December 18	2.50	2.40	2.35	1.25
December 23	2.75	2.65	2.60	1.50
1920				
January 6	3.00	2.90	2.85	1.75
February 27	3.25	3.15	3.10	2.00
March 16	3.50	3.40	3.35	2.25

BULL BAYOU

1919	38°+	35°+	32°+	32°—
August 12	1.90	1.80	1.75	.75
December 18	2.15	2.05	2.00	1.00
December 23	2.40	2.30	2.25	1.25
1920				
January 6	2.65	2.55	2.50	1.50
February 27	2.90	2.80	2.75	1.75
March 16	3.15	3.05	3.00	2.00

Treating Crude Oil Emulsions



Sharples Super-Centrifuge for treatment of crude oil emulsions

THERE are many different kinds of crude oil emulsions. Those with heavy oil, those with light—salt water and fresh water. Those contaminated with clay or sand. No two act alike. To handle any given emulsion not only correct apparatus, but a full knowledge of the "nature and habits" of that emulsion is required.

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Sharples Super-Centrifugal Process for the Resolution of Crude Oil Emulsions

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Taking Accurate Samples in Rotary Drilling

Is Possible if Proper Preparations Have Been Made for It

By JOHN R. SUMAN

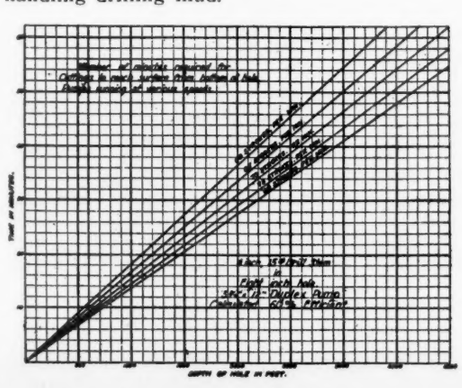
Much better work can be done in the collection of accurate samples from rotary drilled wells than is apparent at first thought. We have heard some very severe criticism of the rotary system of drilling on the ground that it is impossible to get accurate samples of the formations drilled through. It is the object of Mr. Suman, who is assistant to the general manager of the Rio Bravo and East Coast Oil Companies, to show in this article that it is possible to get very accurate samples of rotary drilled wells, providing proper precautions are taken.—Editor.

THE first rule to lay down in considering the subject of accurate formation records in rotary drilled holes is to allow that the driller on the well is a man of average intelligence, who knows from the way his rotary is working the general character of the formation he is drilling in; that is, whether it is hard or soft, gummy or otherwise, whether it cuts clean or is full of "boulders." This is told partly by the way the pumps work and partly by the ease with which the formation drills.

Then we will assume that a couple of joints of surface casing have been set with a tee at the top, into which a joint of six-inch pipe has been screwed for conducting the drill mud to the side of the derrick. The sample can be collected in a sawed-off nail keg into which three or four thread protectors have been placed. This keg is placed under the discharging fluid so as to intercept a part of the column. As a general rule the thicker the drill mud the more accurate will be the sample obtained. This is due to the fact that thick mud plasters the hole and keeps it from coming and at the same time it forms a coating around unconsolidated material and carries it to the surface in its natural state. The writer has seen small balls of unconsolidated oid sand up to one-fourth inch in diameter which came from 2000 feet underground. This material when picked from the sample bag looked like a small ball of clay, but upon being broken open it proved to be a ball of very fine-grained oil sand plastered with mud and still containing the "live" oil which it carried when drilled into.

Next we will assume that the drill has been working in a stiff gumbo as shown by the way the pumps work. Then the drilling gets easier and the driller at once begins to look for a change in the formation. Quite a good deal of difference of opinion exists in the Gulf Coast country as to how long one should wait after drilling into a formation before he begins to look for samples of it. By referring to the series of tables here shown one can easily see how long it takes samples to travel from the bottom of holes of different sizes using different sizes of drill stem. The common size of pump used in the Gulf Coast territory is the 10x5¾x12 pump, and the pumping speed will vary from 55 to 75 stroker per minute. The writer made a test of two of these pumps on the derrick floor and found that one pump had a 10 inch stroke and one had an 11 inch stroke, instead of 12. While running at 60 strokes per minute these pumps should deliver 160 gpm. By actual test they delivered 97 gpm, showing that these pumps were only 60 per cent efficient.

Another test made with another set of pumps running at 45 strokes per minute showed that they were delivering 75 gallons per minute when they should deliver 120 gallons, giving an efficiency of 62 per cent. It is the writer's opinion that 60 per cent represents the average efficiency of this class of pumps handling drilling mud.



Formula for Cuttings Speed

The attached diagrams are figured from the following formula:

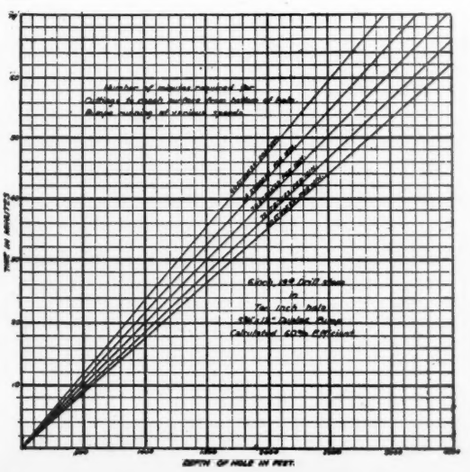
$$N = \frac{D(R2 - r2)E}{x2yz}$$

where

N = number of minutes for fluid to be expelled from hole and sample brought up.
R = radius of drilled hole (½ diameter).
r = radius of outside of stem (½ diameter).
D = depth of hole in inches.
x = radius of pump cylinder (½ diameter).
y = stroke of pump.
z = Pump impulses per minute (both sides).
= 2 x number of strokes on both sides.
E = efficiency of pump (60 per cent used).

You will note by these diagrams that it would take cuttings 28½ minutes to travel from the bottom of a 3000 foot hole of 6 inch diameter containing 3 inch drill stem and with pump running 65 strokes per minute.

These tables do not take into account the displacement o fthe drill collars or tool joints; neither do they allow for the lage of the cuttings behind the current of drill mud. It is quite possible that these two factors can be left out of this consideration, as they are small and tend to offset each other. Of course the lag of the cuttings will be less the heavier the drill mud used and the faster the pumps are run.



Most all of the grief stems or "Kelly joints" in use by the better class of drillers in the Gulf Coast country are marked with a cold chisel every foot of their length. These stems are further marked in Roman numerals beginning with one at the bottom and going to 28 at the top. The driller keeps track of the depth to the change in the formations by noting the mark on his grief stem at the time he enters the new formation. As he has a correct tally of the amount of drill stem in the hole at all times this gives a very accurate measure on the top of the new formation. By making the same notation when he goes out of the new formation, he knows exactly the thickness of the formation and the point at which it occurs. By waiting the proper length of time to collect the sample from the sample box he will then have an accurate sample of the formation as well as a correct notation as to its depth below the surface and its thickness.

Rotary Depth Easily Checked

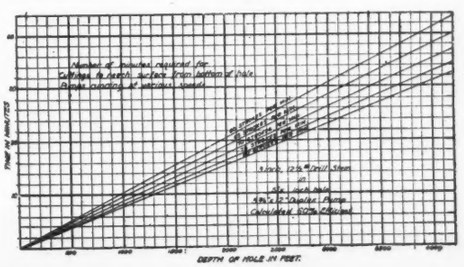
It has been the writer's experience in cable tool country that no such accurate information as to the depth of the formation is at hand. It is customary to run a steel measuring line in the North Texas cable tool district only every week or so or when getting ready to set casing or probably when entering a formation like the black lime. In the meantime the drillers keep track of the depth to the formation on the sand line. The writer has checked up many holes with a measuring line which were as much as 40 to 50 feet off. In this respect the rotary country gives much greater accuracy than the cable tool country.

After the pumps have run the proper length of time to bring the sample to the derrick floor, the sample keg is inserted under the edge of the column of drilling mud coming from the 6-inch casing. After a lapse of several minutes this keg is removed and another inserted in its place. The cuttings in the keg are then washed with clear water in order to free them of drilling mud. This sample while still wet is inspected by the driller and then poured into a bottle for future reference. It is very desirable to leave the sample wet because in this manner it stays in its natural state and can be inspected weeks later for oil, etc., and still have any light oil which might be held in the sand.

Gas Noted in Frothy Mud

In the meantime any indications of gas will be noted from the frothy nature of the drill mud as it comes from the well and circulates in the ditch. Several samples are usually taken in the keg and each one checked against the others in order to arrive at the exact nature of the formation drilled through. Some pieces of overlying formations which have caved off in the hole will naturally be found in with the cuttings from the bottom of the hole, but these will not be considered, as the driller will recognize them, having seen them previously. In drilling with cable tools, where much open hole is carried, this same trouble arises and but little more discretion is necessary in samples from rotary drilled wells than in samples from cable tool drilled holes.

When pulling out to change bits, there will usually be a very good sample of the forma-



tion last drilled through clinging to the sides of the bits. This gives a very accurate sample from a particular point, but is not satisfactory as a sample of the whole formation as the one which is gathered from the sample keg.

On Rig at 'All Times

Companies drilling wildcat tests usually keep a sampler on the rig at all times, and it is this man's business to bottle the samples furnished him by the driller. In this way the driller is relieved of all the trouble of collecting samples and can devote all his time to making hole and looking after the machinery. Usually the more competent a driller is the more interested he will be in making hole and the less time he will want to spend in collecting and preserving samples. It has been the writer's experience that the better class of drillrs are vry glad to have a sampler on the derrick floor, and if th esampler is the right kind of man he can be made very useful. Some companes give the sampler other duties to perform such as keeping time, making out fuel oil reports and helding the driller with his drilling reports.

Many of the larger companies operating in the Gulf Coast country require only dried samples to be sent to their main office for inspection. These samles are tabulated, analyzed and filed away in the geological department. The samples from each well are kept in separate compartments of the filing system in consecutive orders from top to bottom. A detailed log is prepared in the geological department from these samples and this is checked against the log sent in by the driller upon the completion of the well. Different filing systems are used by different companies, but they all answer the same purpose.

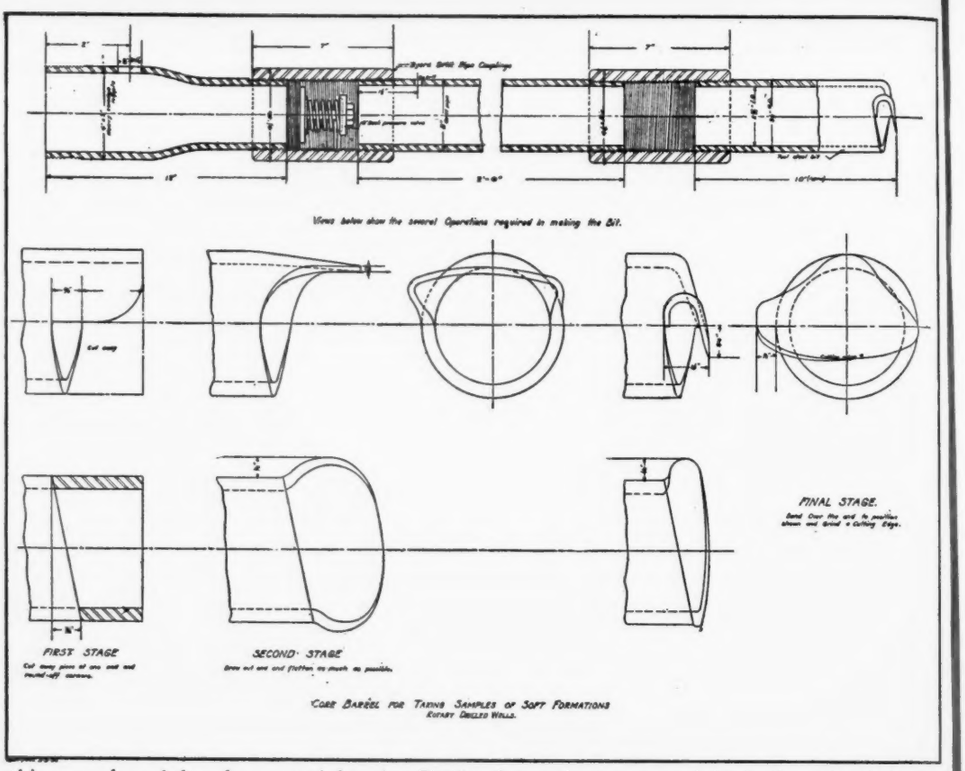
TAKING OF CORES

At various times it is desirable to take cores of formations in rotary drilled wells, and there are several successful methods in use for doing this. Some companies have been using a coring device in soft formations in which the core barrel is incorporated in the center of a fish tail bit; or in other words, the fish tail bit is so made as to have a hollow tube of about 1½ inch diameter running up the center. This 1½ inch opening in the shank of the bit is threaded and pipe is screwed into it of sufficient length to take the amount of core desired. The opening up the center of the bit is tapered somewhat, an dthis makes it slightly larger at the ton than at the bottom. This takering effect is made for the purpose of catching the core and holding same when the drill pipe is pulled from the hole.

Using this device a hole is maintained of standard gauge and the drilling is performed in the same manner as if they were using an ordinary fish tail bit. The only objections are that the sample as obtained is not kept in its original state and the length of sample is in the core barrel does not give the thickness of the formation drilled into.

The core barrel shown in the attached drawing probably has a broader use than any other. It is made by cutting off and bending over the bottom of a piece of pipe and it cuts like an ordinary post-hole auger. In pulling out of the hole the lip holds the sample in the barrel. The Gulf Production Company uses this device in preference to all others.

Dr. W. A. J. M. van Waterschoot van der Gracht, president of the Roxana Petroleum Corporation, invented a coring device for taking cores in soft formations where drilling with the rotary system. He used this very satisfactorily and very successfully while prospecting for coal deposits in northern Holland, at the time he was director of the Geological Survey of The Netherlands. I understand that



Core Barrel for Taking Samples of Soft Formations
Rotary Drilled Wells.

this core barrel has been used by the Shell Company of California. They are made by the Holland Drill Company, of The Netherlands. The only complicated thing about this coring device is the shoe which is screwed onto the 6-inch drill stem. the core barrel can be made 4 inches in size and of a sufficient length to take the amount of core desired. There is no reason why a 30-foot core cannot be taken at one time, if it is wanted. The core barrel is made up of one-foot lengths of flush joint pipe and the bottom one of these is screwed into the shoe. The shoe has water courses running through it and is made of steel. The bottom of this shoe has slots into which fit cast steel cutting teeth. These teeth are set into this shoe in somewhat the same way as removable teeth are fitted into circular saws in sawmills. As fast as the teeth are worn out they are taken from the shoe and new ones inserted. Hence there is never any blacksmithing to be done when using this core barrel. On the inside of the shoe, some small springs are attached which keep the core from falling out, once it is taken. On the top of the core barrel, an ordinary back pressure valve is fitted. This allows the mud and water contained in the barrel to be forced out as the core moves up the barrel and prevents the drill mud from entering the top of the core barrel.

Taking Out the Core

When the core is removed from the hole some difficulty will always be found in getting it out of the core barrel. In using one-foot lengths of flush joint pipe these can be unscrewed and the core pushed out in one-foot lengths.

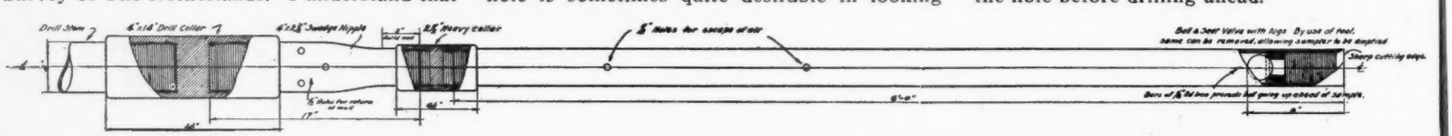
Also herewith is shown drawing of a coring device used by the Rio Bravo Oil Company for coring in soft formations. This has performed very satisfactorily, but it has the objection that only four or five feet of core can be made at one time and all hole has to be reamed in size afterwards. This reduction of hole is sometimes quite desirable in looking for casing seats and in feeling ahead for oil sand when it is desired to set a string of casing immediately above the oil sand.

Coring Rock Formations

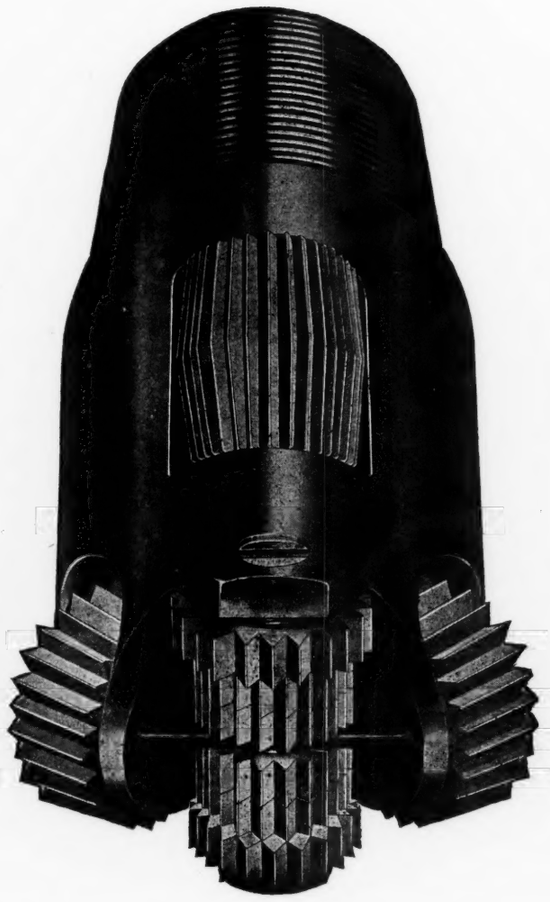
For coring rock in the Gulf Coast country there are many successful types of coring devices in use. One of the most common is an ordinary piece of pipe which has been annealed and had teeth cut in the bottom of it. It is referred to as a "basket" by the drillers. The pipe is lowered into the hole and rotated for the length of core which it is desired to take and then the drill pipe is lifted up a short ways and dropped until the driller feels reasonably sure that the teeth have been tured in enough to hold the core while he is pulling out of the hole. This device seldom fails to catch the core.

Mr. A. R. Gamble, who is drilling for the Humble Oil & Refining Company at Stratton Ridge, in Brazoria County, has probably taken more cores than any other driller in the Gulf Coast country. He uses and ordinary piece of pipe, on the bottom of which he cuts a small v-shaped notch. This is lowered into the hol eand rotated on bottom. It has been found that this core barrel makes a core just as fast as any other style in use. The barrel is rotated until the amount of hole desired has been made. (Cores 8 to 10 feet long are commonly taken.) He then unscrews the swivel on the derrick floor and drops into the drill stem a double handful of small pieces of cast iron of about the same size as one's finger nail. He then screws the swivel back on and starts the pump and as soon as these pieces of cast iron have reached bottom he raises his drill stem a few inches and lowers it slowly, and after repeating thi sa few times he pulls out. The pieces of cast iron become lodged between the barrel and the core and hold the core in the barrel. In almost every case he brings th core out.

Of course in using either one of these types of core barrel it becomes necessary to ream the hole before drilling ahead.



The Hughes Reaming Cross Roller Bit



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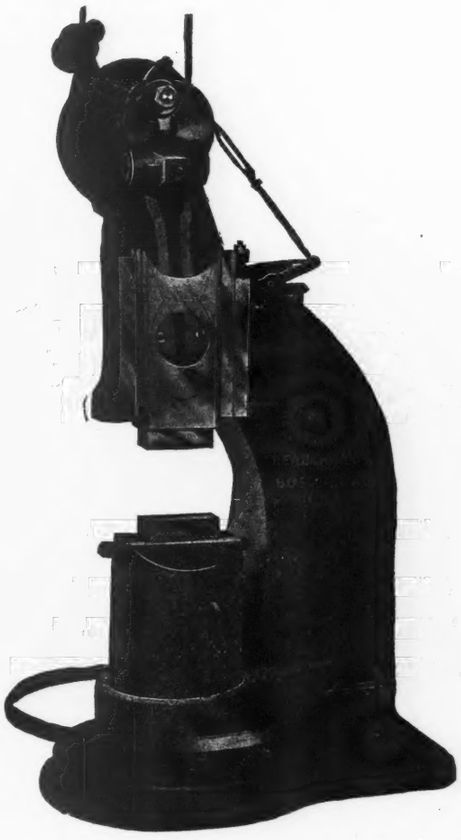

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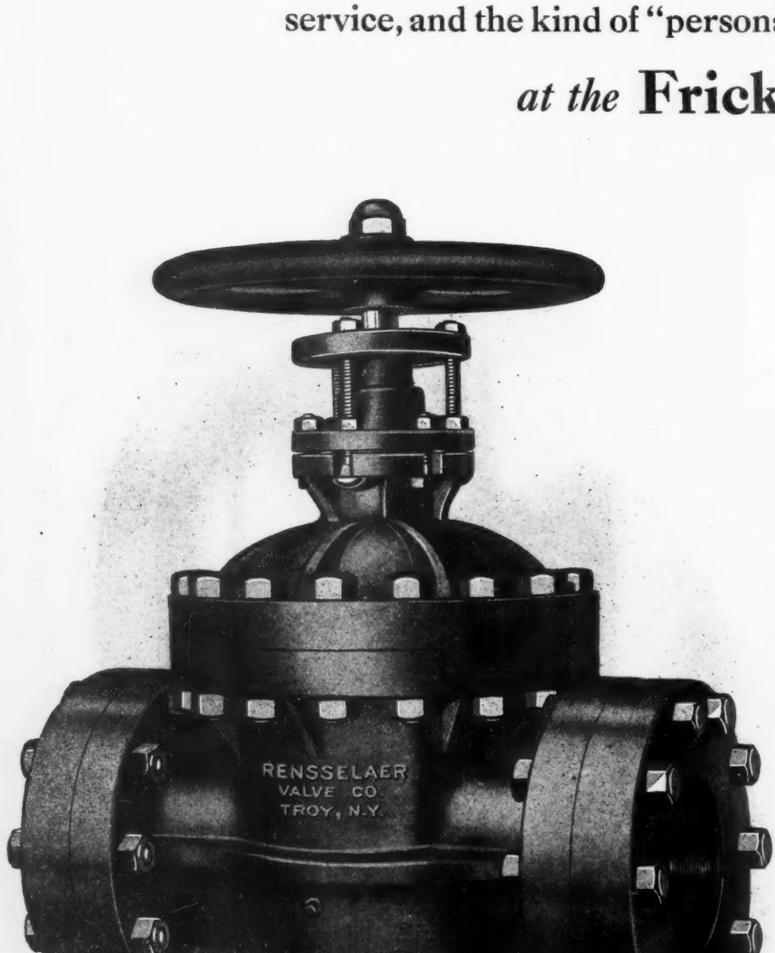

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RANGER PRODUCTION

The average daily production of Eastland County during the past week was distributed approximately as follows:

	Barrels
Prairie Oil & Gas Company	4,950
The Texas Company	2,750
Texas & Pacific Coal & Oil Co.	2,000
Sinclair Consolidated	1,375
Gulf Production Company	1,300
Fensland Oil Company	1,000
Magnolia Petroleum Company	890
Humble Oil & Refining Company	600
Sun Company	290
Mid-Kansas Oil & Gas Company	290
Miscellaneous	10,890
Total	26,235
Last week	28,470

RANGER WELLS BELOW 3000 FEET

Burk Central Oil Co.'s No. 1 Langford, pulling casing to clean out.

Drillers Oil Co.'s No. 3 Barnes, fishing for tools 3341 feet.

Empire Gas & Fuel Co.'s No. 5 Allen, cleaning out after shot 3440 feet.

H. V. Foster's No. 2 Hilburn, drilling 3275 feet.

Gladstone Oil & Ref. Co.'s No. 4 Wright, drilling 3450 feet; Gulf Production Co.'s No. 2 Brelsford, fishing 3316 feet.

Humble Oil & Ref. Co.'s No. 1 Hague, drilling 3545 feet.

Invincible Oil Co.'s No. 1 Shook, fishing 3050 feet.

Magnolia Petroleum Co.'s No. 4 Loper, cleaning out after shot 3357 feet; 5 Turner, fishing 3512 feet; 7 Turner, shut down for orders; Mann-Rothwell's No. 1 Bourland, shut down for orders; John Markham Jr.'s No. 3 Danley, fishing 3478 feet; 1 Vowell, drilling 3135 feet.

New Domain Oil & Gas Co.'s No. 1 Baumgardner, drilling 3465 feet.

Prairie Oil & Gas Co.'s No. 3 Christmas, shut down 3223 feet; 1 Ainsworth, drilling 3210 feet; 5 Christmas, drilling 3375 feet; 5 Davis, fishing 3500 feet; 2 Demic, drilling 3345 feet; 1 Fox, drilling 3525 feet; 4 Hanks, fishing 3350 feet; 5 Hanks, drilling 3375 feet; 5-A Madding, drilling 3435 feet; 8-B Madding, drilling 3545 feet.

Ranger Brooks Oil Co.'s No. 4 Brooks, drilling by pipe, 3315 feet; Root, Hupp & Duff's No. 1 Carter, cleaning out 3360 feet.

States Oil Corp.'s No. 2 Barber, drilling 4428 feet; 5 Earnest, pulling casing 3077 feet; 1 Hood, drilling 3700 feet.

W. Templeman et al's No. 1 Hill, fishing 3010 feet; Texas & Pacific Coal & Oil Co.'s No. 3-B Butler, fishing 3435 feet; 5 Clemmer, fishing 3150 feet; 3 Connor, setting casing 3207 feet; 2 Glenn, drilling 3076 feet; 17 Norwood, shut down for shot 3485 feet; 25 Norwood, shut down 3270 feet; 30 Norwood, shut down for shot 3490 feet; 4 Terrell, shut down 3365 feet; 6 Terrell, shut down 3580 feet; The Texas Co.'s No. 1 Beck, drilling 3235 feet; 4 Boyd, shut down 3560 feet; 23 Boyd, cleaning out 3685 feet; 25 Boyd, fishing 3514 feet; 1 Hagan, drilling 3415 feet; 15 Littleton, shut down 3380 feet; 18 Littleton, set casing 3306 feet; 12 Turner, pulling casing 3340 feet; Thraves et al's No. 3 Sue, dry and abandoned 3515 feet.

OTHER RANGER OPERATIONS

Ajax-Hercules Oil Co.'s No. 1 Baggett, drilling 2855 feet.

Delmar Oil Co.'s No. 1 Hitt, drilling 1975 feet. feet; 1 Williamson, shut down for casing.

Great Southern Oil Co.'s No. 2 Baumgardner, fishing 2600 feet; Gulf Production Co.'s No. 1 Baggett, drilling 725 feet; 1 Basham, drilling 810 feet.

Hampton & Rosenfield's No. 1 Dawson, drilling 550 feet; Pete Huffman et al's No. 1 Hitt, drilling 1900 feet; Humble Oil & Ref. Co.'s No. 1 Clark, under-reaming 2080 feet; 1 Ellis, drilling 302 feet; 12 Fargason, drilling 1576 feet; 1 Harris, drilling 1025 feet; 1 Wharton, drilling 350 feet.

Invincible Oil Co.'s No. 2 Shook, drilling 2300 feet; 3 Shook, fishing 1810 feet; 4 Shook, setting casing 1810 feet.

Jackson Oil & Ref. Co.'s No. 1 Daniels, shut down 450 feet.

First Producer from a True Sand Completed in Eastland County

THE Ardizonne-Braden Oil Co.'s No. 3 Kincaid, a mile and a half north of the town of Eastland in Eastland county, is making 200 barrels a day from a sand at 3188 to 3210 feet. This is the first real well to be completed in a true Sand in Eastland County, and is of considerable interest, because of that fact.

In their No. 1 Kincaid a sand was found at a depth corresponding to that at which production was secured in No. 3, but the well has not been a successful completion, although it is making 50 barrels a day, and has been for some time, No. 2 is still cleaning out.

While the pay in Eastland county is sometimes referred to as a sand, it in reality is a lime, the Ardizzone-Braden's wells and the Gulf Production Company's No. 1 Brelsford being the only wells completed thus far in a true oil sand. The No. 3 Kincaid is flowing natural.

El Dorado Oil & Gas Co.'s No. 1 Bobo, fishing 2025

Latshaw et al's No. 1 Jackson, shut down 340 feet; Long Horn Oil Co.'s No. 1 Earnest, shut down for casing 2880 feet; Lone Star Gas Co.'s No. 1 Bush, drilling 2150 feet; 1 Green, drilling 1925 feet.

Manley-Heck Oil Co.'s No. 1 Brooks, fishing 1325 feet; Mascho-Maxwell Oil Co.'s No. 1 Green, shut down 250 feet; Mid-Kansas Oil & Gas Co.'s No. 2 Harrell, drilling 2020 feet; 4 Harrell, drilling 1400 feet; 7 Harrell, drilling 825 feet; 8 Harrell, drilling 750 feet; 9 Harrell, drilling 450 feet; C. L. Mullen et al's No. 1 Schmick, shut down.

New Domain Oil & Gas Co.'s No. 1 Downtain, fishing 2370 feet.

A. C. Parker et al's No. 1 Green, drilling 2105 feet; Prairie Oil & Gas Co.'s No. 4 Davis, under-reaming 2465 feet; 12-B Madding, drilling 300 feet; 2 Whitson, fishing 865 feet.

Ranger Texas Oil Co.'s No. 2 Harrell, drilling 1800 feet; Rising Star Production Co.'s No. 1 Terry, drilling 1735 feet; Root, Hupp & Duff's No. 5 Connellee, drilling 2365 feet; 7 Connellee, drilling 1925 feet; J. B. Ross et al's No. 2 Bond, drilling 1925 feet; 1 Hawk, shut down 1220 feet.

Choate Oil Corp.'s No. 2 Baggett, drilling 920 feet; 3 Baggett, drilling 550 feet.

States Oil Corp.'s No. 3 Butler, drilling 2050 feet; 2 Connellee, drilling 500 feet; 1 Davenport, drilling 1900 feet; 2-E Dooley, drilling 2180 feet; 1 Fisher, drilling 300 feet; 7 Harrell, pulling casing 1827 feet; 11 Harrell, drilling 1015 feet; 12 Harrell, shut down for repairs 1885 feet; 2 J. C. Harrell, drilling 925 feet; 1 Henderson, rig burned at 2200 feet; 6 Holleman, drilling 1525 feet; 1 Johnson, drilling 650 feet; 6-W Loper, shut down for crew 1821 feet; 4 Nix, drilling 700 feet; 6 Parrack, drilling 600 feet; 2 Ray, drilling 175 feet; 3 Shannan, under-reaming 1134 feet; 4 Shannan, pulling casing 1860 feet; 2 Summerall, drilling 1300 feet; Sturm Oil Co.'s No. 1 Vestal, drilling 900 feet.

Tex-Ana Oil Co.'s No. 1 Cox, drilling 925 feet; Texas & Pacific Coal & Oil Co.'s No. 1 Barker, drilling 2195 feet; 26 Norwood, setting casing 1990 feet; The Texas Co.'s No. 1 Exall, setting casing 2950 feet; 20 Littleton-drilling by tools 825 feet; 21 Littleton, fishing 2382 feet; Texolean Oil Co.'s No. 2 Sneed, shut down 2110 feet; 3 Sneed, drilling 800 feet; Tex-Ken Oil Co.'s No. 1 Parker, shut down 450 feet; Transcontinental Oil Co.'s No. 1 Tharp, drilling 2105 feet; 2 Tharp, drilling 175 feet.

Virginia Oil Co.'s No. 1 Tharp, shut down 1120 feet.

Woodruff Oil Co.'s No. 1 Woodruff, drilling 550 feet.

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The Engineering Aspects of the Petroleum Industry of the World

By EARL W. WAGY
Petroleum Engineer, U. S. Bureau of Mines

SINCE the beginning of the petroleum industry in 1859, up to within two or three years ago, there has been a dearth of engineers who have had the fundamental technical training and also sufficient practical experience so that they could compete with practical men.

As in the early stages of the mining industry, the petroleum industry has been rather slow in realizing the need for technical assistance and investigation in the development and production of oil lands. The rapid increase in consumption, however, during the past few years has accentuated this need more than anything else could have done. When it is realized that our production can no longer keep pace with the demand, it is easily understood why it is imperative that methods be instituted which will tend to conserve and prolong the supply of oil from the fields now known. It is interesting to note from preliminary production figures given out by the U. S. Geological Survey for the year 1919, that the United States produced about 378,000,000 barrels, an increase of 22,000,000 or 6 per cent over 1918 production and also there was imported, chiefly from Mexico, a little over 52,000,000 barrels to satisfy the trade demand in the United States, of which almost 6,000,000 barrels was exported. Stocks were not materially increased.

Other significant facts regarding our petroleum industry are that just recently the U. S. Shipping Board in soliciting bids for 24,000,000 barrels of fuel oil to meet prospective needs, received bids for only 1,500,000 barrels at prices ranging from 75 to 90 per cent higher than was paid last year. One large company on the Pacific Coast has stopped its export trade, and has notified consumers of gas engine distillate that they will no longer make deliveries of this product. This will materially affect the farmer, in many instances, through his use of the truck and tractor.

Taking into consideration at the same time the rapid growth of industries manufacturing automobiles, trucks, tractors and airplanes, indications are that consumption will be steadily on the increase. It is, therefore, imperative that producers and consumers exert themselves to the utmost in order to produce and utilize in the most efficient manner possible the supply of petroleum and its products. It is believed that engineers, with the requisite amount of practical training, can do much and should take a greater interest than has been shown heretofore in the petroleum industry.

Relation of Engineer to Industry

The question has often been asked just what relation the engineer has to the petroleum industry, what his duties might be and how engineeering principles may be applied to the industry in such a way as to be of value to the industry itself, at the same time offering engineers inducement to take up this form of work as a permanent profession. Until recently, comparatively little attention has been given to the petroleum industry by the engineering profession except in storage, refining, transportation and natural gas. It is notable that while attention has been given to these fields, practically nothing has been done in the field of production by the engineering profession. It is believed that this is a condition that should be remedied as soon as possible, inasmuch as all the other fields are absolutely dependent on this end of the industry for their existence. This lack of attention is confirmed by the fact that few colleges up to the present time have instituted in their curricula courses bearing on peroleum production and utilization. Among the few which offer limited courses are Leland Stanford University, University of California, and the University of Pittsburgh. It is also reported that Oklahoma University, Lafayette College and Masssachusetts Institute of Technology have considered the advisability of adding such courses in the future.

Petroleum Engineering Profession

The petroleum engineering profession may be divided up into several fields of engineering, to which men having the prerequisite qualifications might adapt themselves. They are as follows: The petroleum production engineer, whose work should be along the lines of the examples just quoted; the petroleum construction engineer; the refinery engineer; the natural gas engineer, and the oil shale engineer. The technical education required for men entering this industry would be governed by the particular field he desires to enter. Just as we have specialists in the mining industry, there are special lines of endeavor for the petroleum engineer to follow. He should be a graduate from a college of mines, or a geologist, or a civil or mechanical engineer. It is not implied here that any one of these men would be fitted to carry on the work in all the different fields of the petroleum industry, but there is special work for which each could, after having some practical experience, apply himself with satisfactory results.

The petroleum engineer should by all means spend at least two years, after completing his college education, in carrying on some practical work in connection with oil field problems. This will tend to give him a knowedge of the industry that will familiarize him with methods and equipment and its use. There are usually two methods followed in gaining this experience—one is to accept a position in the fields as what is termed a resident engineer, in which he assists with all problems in connection with studying sub-surface methods, or construction work; the other is to enter the field as a laborer and take up the practical work step by step until he has obtained a general working knowledge of the field in this way.

Petroleum Production Engineer

We usually think of the geologists more in connection with unknown or unproved territories, and the purpose of this paper will be to take up the work after the geologist has made his examination and reported the land as favorable or unfavorable. Assuming that he reports favorably, it is then the duty of the petroleum production engineer to take up the work and direct it in such a way as to location of wells and drilling and production methods which will produce maximum efficiency. If the field be already in proven territory, and the land involved open for competitive bidding, the engineer can prove his value to his clients by studying the production records of surrounding wells, and determining by engineering principles from the deductions gained from their past performance just what would be an equitable price to pay for a certain piece of land. Heretofore the matter of buying and selling has been largely a matter of mere guesswork and the method of arriving at the value of the land, as far as oil production was concerned, was an unsolvable mystery. The great value of being able to substitute engineering principles for rule of thumb methods can readily be seen. It might be said in connection with this matter of determining land values in the oil fields, that the Internal Revenue Department has a corps of engineers who during the past year have been using engineering methods for evaluating lands for tax purposes.

One of the biggest problems that the production engineer has to consider is to prevent wastes and overcome underground losses. This has to do with subsurface problems and completing the wells in such a manner as to prevent any waste of either gas or oil. In carrying on this type of work, one of the first points will be the collection of data. It has been found, up to a few years ago, that this has not been obtainable in any of the fields where not required by law. A well should be drilled in such a manner as to require a minimum of repair work during the producing life of the well.

Examples of Specific Problems

As examples of what might be done by the petroleum production engineering profession in the petroleum industry, it is only necessary to point to the work which has been performed in the last few years by the Bureau of Mines in connection with co-operative work with the Indian Office in the State of Oklahoma. Here the Bureau of Mines was able to increase the production of a number of wells in one small field to over 3000 barrels of oil a day. The repair work was preceded by an underground study by engineers, followed by recommendations for repair work in the wells to overcome difficulties caused by infiltrating waters. In a similar manner, work in co-operation with the Rocky Mountain Petroleum Association in Wyoming brought about the complete recovery of a well that before the work of repair had been instituted, was standing full of water. The value of one month's production from this one well more than covered the cost of the services of four men for a period of one year.

Another example is the California State Mining Bureau's operations in California, where an engineering department has been developed to carry on this type of work in a systematic way. The work during the last few years indicates that those companies who have complied with the recommendations of the state mining bureau engineers and have co-operated in every way possible, are now successfully completing from 80 to 90 per cent of their wells, whereas before this educational and technical plan was instituted only 25 to 30 per cent, on the average, were successfully completed. The yearly production of California has held up remarkably well, and it is recognized, from the nature of the fields, that

(Continued on Page 94.)

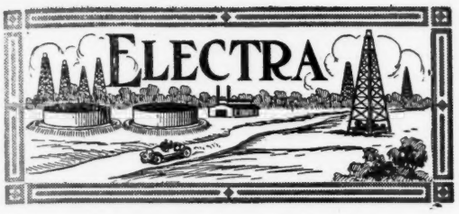
NORTHEAST TEXAS COUNTIES

(Continued from Page 45.)

	Drilling Wells	Rigs	Locations
Angelina County	1		
Bowie County	4		
Cass County	1	2	
Cherokee County	2		
Delta County	1		
Fannin County	1		
Franklin County	1		
Gregg County	1		
Harrison County	8	3	
Hopkins County	2	2	1
Lamar County	7	2	
Marion County	3	2	2
Nacogdoches County	1		
Panola County	15	4	2
Red River County	2	1	
Rusk County	3	1	
San Augustine County	1		
Shelby County	6	2	
Smith County	3	1	
Titus County	1		
Wood County	3	1	
Total	67	21	5

ARKANSAS COUNTIES

Columbia County	5		
Lafayette County	3	1	
Miller County		1	
Ouachita County	3	2	
Union County	3	5	1
Total	14	9	1



ELECTRA PRODUCTION

Pipe line runs from the Electra field showed a daily total of 1450 barrels daily last week, divided as follows:

	Barrels
Magnolia Pet. Co.	4,100
Texas Company	4,000
Gulf Prod. Co.	700
Miscellaneous	1,650
Total	10,450
Last week	10,300

ELECTRA COMPLETION

Roy B. Jones' trustee, No. 11 Burnett, dry and abandoned, 1700 feet.

PAUL GETS A DAY IN JAIL AND CHANGES HIS OCCUPATION

Tulsa, Okla., June 29.

My still lovin cleo—

well hear i am just getting out of the jail up hear 2 Tulsa but i no that when you no what i done you wilnot feel like blaimin me none as it was in the intrest of a lady which i done it. i was settin in a Admiral jitney goin out to sea a fren that works for jim armstrong at the Gas So pump and burner co and they was a lady settin on the littul seet of the jitney. they was a man setn on the side of the jitney and when the jitney run up to a corner the man lent over and whispered, "when that woman gets off here i am goin 2 pintch her seet." well i jest nacherly hawled away and wen they pickt him up his mothir wood not of knowed him.

i explained it 2 the judge that i was pertecktin a anyscent woman but—what can you do with won of thease judges? I cannot do nothin with them i see so i am goin back 2 texs.

i got a great skeme 2 git ritch. i am about thru with bein a rufneck down in the gulf cost cuntry so i aim 2 make my livin locatin oil wells. no i donot meen that i aim to locate wells which has already got oil in them but i aim to locate wells whitch will have oil in them when the co. drills them into the oilsand. i understand that it is ezy. awl a feller has to do is to walk acrost the grownd and if he feals trembly oil is their. i remember that when the depty constble 2 goose creek wood be away and a feller cood get some licker i used to feal like they was oil under me every time when i wood go in the fiel and as i no that they was oil in the fiel i no that i have got the infinity with the oil to tell it.

So i wrote the Guffy co. a letter whitch i am sendin you a copy of as follos—

In Replie To oil Bisness I Would Llike To Proove To you What I Can Doo. I Can Lokate oil Pools An if you will give Me Work To Doo, I Will Prove it To you. I Hav got a Infinity To Llokate oil an I will Llokate Three oil Pools Free of Charge To Prove What I Can Doo An if I Cant It Wont Cost you Nothing. Please Ancer This An Llet Me Now What you Will Doo An you will find a too cence To Pay For a Return Ancer.

Yours Truley.

when i locate a few wells i will let you no and i guess that we can get married then.

Lovinly,
your,
Paul.

Britain and Anglo-Persian Oil Company Form Partnership

WASHINGTON, D. C., June 28.—An idea of the world-wide operations of the Anglo-Persian Oil Company, a majority of whose stock is owned by the British government, may be gained from a bill now under consideration by the parliament of the commonwealth of Australia whereby the commonwealth and the oil company become partners in the oil industry in Australia and the island of Papua.

The proposed arrangements for operations in Australia, as outlined in reports received in Washington, consist of the formation of a refinery company to be capitalized with 500,000 shares at one pound each, the commonwealth of Australia to subscribe for and be allotted 250,001 shares, and the Anglo-Persian Oil Co. the balance. Of the board of directors, three-sevenths are to be nominated by and represent the government, and four-sevenths are to represent the oil company.

It is stipulated that the refinery company shall not enter into or be in any way concerned in or a party to act in concert with any commercial trust or combine, but shall always be and remain independent British business. It is provided also that it shall give preference to goods manufactured in the commonwealth of Australia in purchasing supplies and equipment.

"The objects of the refinery company shall be:

"(a) The creation and development in Australia of the industry of refining mineral oil.

"(b) The erection, equipment and operation of a modern refinery or refineries in Australia for refining mineral oil.

"(c) The sale and disposal of products of refining mineral oil.

"(d) Such other objects necessary or incidental to or expedient for the aforesaid objects as shall be approved by the commonwealth and the oil company and set forth in the articles of association."

The technical and commercial management of the refinery shall be left entirely in the hands of the refinery company, which after registration is to equip and operate in Australia a modern refinery.

The Anglo-Persian Oil Company obligates itself to supply the refinery with crude oil as much as is requisite but not exceeding 200,000 tons in any one year. The commonwealth engages to supply the refinery a like quantity from sources within Australia as it becomes available to the commonwealth of Australia or in territory of or under the jurisdiction of the commonwealth or in any place over which the commonwealth has a mandate.

The commonwealth is to undertake to insure the full success of the development of the oil refinery industry in Australia for as long as the prices charged by the refinery company are considered fair and reasonable:

"(a) Exercise or cause to be exercised such statutory and administrative powers as it deems advisable to prevent dumping and unfair competition by importers of refined oil from other countries.

"(b) Refund to the refinery company any customs duty paid by the refinery company upon the importation into Australia of crude mineral oil purchased from the oil company and refined in Australia by the refinery company.

"(c) Cause to be introduced into the parliament of the commonwealth and supported as a government measure a bill providing for the imposition of customs duties on crude mineral oil whenever in its opinion such action is necessary or advisable to prevent unfair competition with the products of crude oil refined in Australia by the refinery company."

In addition to this agreement with the Anglo-Persian Oil Company to consider the formation of a refinery, there is under discussion a partnership with the Anglo-Persian Oil Company in the exploration and development of the Papuan Islands, both British owned and the German portion, which has been acquired under mandate since the war.

Under this agreement the Anglo-Persian Oil Company is to send out a geological expedition to explore the country for oil, select drilling sites and conduct and superintend boring operations. The government of Australia is to defray the expense of this undertaking to not exceed one hundred thousand pounds.

It is stated in the "Argus," of Melbourne, Australia, under date of May 12, 1920, that tests have been made in a limited area in Papua the past year which yielded promising though not commercial results. The essence of this agreement is that the commonwealth is to furnish funds and the Anglo-Persian Oil Company to furnish technical experience. The commonwealth, however, has not alienated any of its rights to the oil fields of Papua.

A recent despatch from Warsaw reports the exploitation of Polish oil resources is rapidly passing into the hands of British, French and Belgian capital. It is said the competition has become so keen that owners of oil bearing lands are no longer willing to give option but immediate purchase is demanded by them. It would appear that if American nationals wish to become interested in the exploitation of oil resources of Poland, they should send technical men without delay who will be empowered to conclude any agreement.

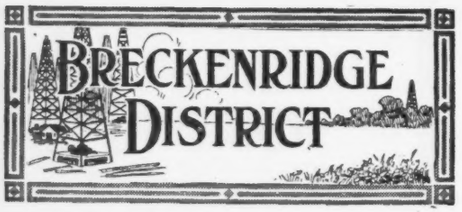
CARRIERS MUST NOTIFY SHIPPERS AND CONSIGNEES OF A DIVERSION

Acting in response to a petition from the American Independent Petroleum Association, the Interstate Commerce Commisison has issued the following notice amending Service Order No. 1:

Service Order No. 1 which ordered and directed common carriers by railroad to divert freight via the routes most available to expedite its movement and to relieve congestion also ordered and directed the carrier responsible for the diversion to mail a notice to the consignee of the traffic stating the car number, places and dates of shipment; and other essential information. It has been urged that a telegraphic notice should be sent to the consignor by the carrier responsible for diversion as to shipments in private cars subject to equalization of empty mileage, and also as to fruits and vegetables, live poultry and other shipments customarily reconsigned upon instructions of the consignor.

While the commission does not consider it necessary at this time to amend Service Order No. 1 in this respect, it is of the opinion that a telegraphic notice of the diversion should be sent to the consignor by the carrier responsible therefor in the case of shipments in private cars, which are subject to equalization of empty mileage, and also of fruits and vegetables, live poultry and other shipments customarily reconsigned upon instructions of the consignor.

GEORGE B. McGINTY,
Secretary.



STEPHENS COUNTY PRODUCTION

The following is the daily average production of the Stephens County fields during the week just ended:

	Barrels
Gulf Production Company	9,100
The Texas Company	7,950
Magnolia Petroleum Company	3,890
The Sun Company	2,050
Mid-Kansas Oil & Gas Company	1,590
Texas & Pacific Coal & Oil Co.	1,450
Humble Oil & Refining Company	1,100
Sinclair Consolidated	1,000
Prairie Oil & Gas Company	400
Fensland Oil Company	350
Miscellaneous	28,625
Total	57,505
Last week	56,679

ANOTHER GOOD WELL ON TOWNSITE

The No. 1 Goodwin of Walker & Perkins, located in Petroleum Heights, at Breckenridge, in Stephens county, which was completed last Saturday has increased its flow from 1500 to better than 3600 barrels toward the middle of the week. On Monday the well showed by actual guage 3800 barrels of oil.

It is by far the best well located on the townsite thus far and will do much to stimulate further drilling in that section.

Cosden's No. 1 Morton is making 600 barrels a day after a shot at 3273-91 feet. This well is in Stephens County.

The Gulf Production Company's No. 1 Hoover is making 20 barrels an hour.

STEPHENS COUNTY COMPLETIONS

Walker Perkins' No. 1 W. C. Goodwin, is making 3600 barrels at 3167 feet. This well is 1 mile northeast of Breckenridge.

Gulf Production Co.'s No. 1 R. T. Hopper, 8 miles northeast of Breckenridge, is making 10,000,000 cubic feet of gas and spraying 50 barrels of oil at 3290 feet.

Mid-Kansas Oil & Gas Company's No. 1 S. L. Harris is completed as a 5 barrel pumper at 3189 feet.

Mid-Kansas Oil & Gas Company's No. 5 E. Y. Jennings is abandoned at 3319 feet. It was a water well. No. 3 Satterfield was abandoned after a 40-quart shot at 3168-82 feet. It made some water. Total depth of hole was 3195 feet.

Planters Oil & Gas Company has abandoned its No. 1 Nannie Walker at 3385 feet.

STEPHENS COUNTY WELLS NEARING COMPLETION

Chapman, Clark and Harbin's No. 2 A. S. Veale is reaming at 3040 feet and making 15,000,000 feet of gas.

Cooper & Henderson's No. 1 J. M. Martin is making 500 barrels.

The Empire Gas and Fuel Company is pulling casing to abandoned its No. 1 Wallace at 3688 feet.

Greenwood and Terrell are preparing to shoot their No. 2 C. A. Baggett at 3244 feet.

Gulf Production Company's No. 1 D. B. Crowley is drilling ahead at 3340 feet with 2000 feet of oil in the hole. No. 5 S. L. Harris has a gas sand at 1780 feet. Gulf Production Company's No. 2 W. H. Humphrey is making a head every 12 hours and about a quarter million feet of gas. A packer is being set. Total depth of hole is 2145 feet.

The Gulf Production Company's No. 4 J. H. Rollins is flowing by heads and cleaning out at 3326 feet.

The Gulf Production Company's No. 4 K. Stoker is a fine water well at 360 feet.

The Gulf Production Company's No. 1 Thompson is showing oil and drilling ahead at 3274 feet.

Hicks et al's No. 1 Satterfield is flowing 50 barrels with bottom of the hole at 3200 feet.

No. 2 State Excess is preparing to pump at 3850 feet.

Humble Oil & Refining Company's No. 2 Sallie Lane was shot with 30 quarts at 3532 to 3552 with no results. It is cleaning out.

Lane Oil Syndicate's No. 1 J. M. Cook is drilling below 3317 feet with 1500 feet of oil in the hole.

Sinclair Cons. Oil Corp.'s No. 1 E. A. Hill

Breckenridge Field Extended North and Lime Dips Down

PICKING up the lime at a depth below where it had been thought the lime would be found the No. 1 Ball of the Roxana Petroleum Company and the Sapulpa Oil & Refining Company, seven miles north of the town of Breckenridge, and four miles north of production in Stephens county, is flowing 1,500 barrels a day. The top of the lime was encountered at 3322 feet and the bottom of the hole is 3322 feet.

The well is significant in that, in addition to adding a four mile substantial extension to the field it proves that production extends down on the north dip of the Breckenridge structure.

Four miles east of the Ball well the Gulf Production Company's No. 1 Hopper is on top of the lime and is spraying oil at 3287 feet. This is proving up an entirely new area.

The joint well of the Roxana and the Sapulpa had some water above the pay and carried it down into the pay, reducing the hole at the top of the lime. The first 10 feet showed little gas, although the well gradually increased in production until on Saturday of last week it was making in excess of 1500 barrels a day which rate was maintained at last report.

The top of the lime in the Roxana-Sapulpa Ball well was encountered at 3170 feet below sea level, while the Gulf Production Company's No. 1 Ward, four miles south of it got the same pay at 1950 and other producing wells around Breckenridge all get the lime from 1950 to 2050 feet, indicating a dip of more than 1000 feet from the Ward to the Ball wells.

The dip was not unexpected but it was thought that the Ball well had passed far beyond the point where the lime would be found, the supposition being that it had missed it altogether. The Humble Oil & Refining Compan's No. 1 Crudgington, to the west of the Roxana-Sapulpa well, which was abandoned at 3435 feet never touched the lime.

The Sapulpa Oil & Refining Company was drilling the well for a half interest in the 80 acre tract on which the well is located, and a third interest in 1600 acres around the well.

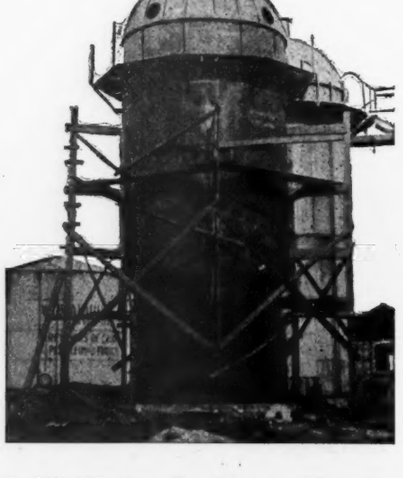
This is the first large production in which the Roxana has been interested in Texas.

WHY?

Lose time and money awaiting delivery of your refinery tankage from far distant points—Railroads are uncertain these days—

WHEN—

From our shops and stocks of materials, located right at your door, you can secure AT ONCE Pressure and Storage Tankage?



Crude and Steam Stills

Agitators

Condenser Boxes

Acid Tanks

Pressure and Storage Tanks

Casing Head Gasoline Plants

Blending and Stock Tanks

Accumulator Drip and Vacuum Tanks Etc., Etc.

WRITE US

Steel Plate Work of All Kinds; Engineers, Manufacturers and Erectors

Tulsa Boiler & Sheet Iron Works

P. O. BOX 1926, TULSA, OKLAHOMA

gave a shot of 190 quarts and is now cleaning out at 3580 feet.

Snowden & McSweeney's No. 1 Ashburn is flowing 200 barrels by heads with the hole caving at 3074 feet.

Texas Co.'s No. 2 S. A. Day is spraying oil and taking down tools at 3097 feet; 5 Lauderdale, swabbing at 3239 feet.

Texas & Pacific Coal & Oil Co.'s No. 19 Satterfield, plugging to abandon at 3855 feet.

Stephens Oil Syndicate's No. 1 Mary Platt, 3 miles northwest of Breckenridge, is in the lime with showing of oil at 3260 feet.

Lone Star Oil & Gas Company's No. 4 Heatlet at 3182 feet is making 200 barrels of oil and 200 barrels of water.

Magnolia Petroleum Co.'s No. 1 F. N. Trammell at 2380 feet has 500 feet of oil in the hole.

Palo Pinto Oil & Gas Co.'s No. 28 Swenson is preparing to pump at 3160 feet.

Pierce Oil Corporation's No. 4 Burke is swabbing at 3380 feet.

STEPHENS COUNTY WELLS DRILLING BELOW 3000 FEET

Bankers Oil & Gas Co. is fishing for tools at 3540 feet in No. 1 Davis Excess. Bell Bros. & McDonald's No. 1 C. A. Baggett is milling at 3305 feet.

Consolidated Oil & Ref. Co.'s No. 1 Galloway is fishing at 3020 feet. Cooper & Henderson Oil Co.'s No. 1 W. S. Marshall is getting ready to straight-ream at 3000 feet.

Gatewood Oil Co. is pumping water through 2-inch from 3200 feet, with total depth of hole 3460 feet. Gulf Production Co.'s No. 1 W. F. Houston is fishing for tools and casing at 3367 feet; No. 1 W. F. & J. H. Houston is cleaning out at 3383 feet; No. 3 Johnson is drilling at 3356 feet with top of lime at 3270 feet; No. 1 J. D. Litton is cleaning out at 3680 feet; No. 4 McCauley is drilling below 3200 feet; No. 3 M. A. Milling is drilling at 3240 feet; No. 4 M. A. Milling is fishing at 3225 feet; No. 1 H. W. Moore, is fishing for tools at 3500 feet; No. 1 E. M. Satterwhite is fishing for tools at 3500 feet; No. 2 E. L. Sherman is standing at 3346 feet; No. 4 J. R. Smith, bailing water 3020 feet; No. 3 K. Stoker, rerunning 6-inch 3230 feet; No. 1 J. D. Youree, cleaning out 3380 feet, total depth 3412 feet.

Halleck & Whaley's No. 1 J. A. Beyer, cleaning out 3360 feet; 1 D. G. Yarborough, straight-reaming 3215 feet; Henderson Gasoline Co.'s rig pulled in 3520 feet; Hercules Oil Co.'s No. 1 Townlot, drilling below 3300 feet; Home Oil & Ref. Co.'s No. 2 State Excess, cleaning out 3350 feet; Humble Oil & Ref. Co.'s No. 1 A. J. Collins, cleaning out 3290 feet; 2 J. Harris, fishing for line 3120 feet; 1 Gilmore Jones, drilling by tools 3385 feet; 1- AM. H. Thorp, straight-reaming 3400 feet.

R. H. Jones' No. 1 J. S. Crowley, drilling 3079 feet.

Lane Oil Synd.'s No. 1 Jackson, standing 3400 feet.

Magnolia Petroleum Co.'s No. 2 Pogue, shut down for 5-inch 3100 feet; 3 Pogue, drilling below 3200 feet; 2 C. D. Ward, drilling by bit 3015 feet; Mid-Kansas Oil & Gas Co.'s No. 1 Cugger, drilling below 3475 feet; 2 E. Y. Jennings, drilling 3090 feet; 9 J. S. Knott, drilling 3250 feet.

Palo Pinto Oil & Gas Co.'s No. 28 S. M. Swenson, drilling 3931 feet; Patterson & O'Donnell's No. 1 Satterfield, drilling 3285 feet; 2 Satterfield, standing 3247 feet; Phillips Petroleum Co.'s No. 3 J. A. Madder, standing 3365 feet; Pierce Oil Corp.'s No. 2 Burke, drilling 3265 feet; 4 R. B. Thomas, cleaning out 3310 feet; Pocahontas Oil Co.'s No. 1 Harris & Roberts, fishing 3370 feet; Prairie Oil & Gas Co.'s No. 1 George Bratton, straightening bad hole 3545 feet; 1 J. M. McCook, standing 3500 feet; 1 Demic, fishing 3575 feet; 2 W. M. Guest, ready to ream at 3310 feet; 2 R. A. Sorgee, cleaning out 3405 feet; 3 Maggie Sparks, cleaning out 3400 feet; 12 Maggie Sparks, cleaning out 3410 feet.

Quakins Petroleum Co.'s No. 1 Harman, fishing 3750 feet.

Sinclair Consolidated Oil Co.'s No. 1 H. B. Adams, fishing 3400 feet; 7 B. F. Coody, repairing rig 3210 feet; 8 B. F. Coody, cleaning out 3407 feet; 1 N. M. Davenport, fishing for casing 3032 feet; 1 P. P. Pierce, waiting on orders 3395 feet; Somerset Oil Co.'s No. 1 J. W. Gardenshire rigging up again at 3560 feet; Southwestern Petroleum Co.'s No. 1 W. H. Tolle, cleaning out 3315 feet; States Oil Corp.'s No. 1 J. W. Langford, cleaning out 3392 feet.

The Texas Co.'s No. 4 M. L. Bradshaw, waiting for orders 3350 feet; 6 Bradshaw, waiting for orders 3366 feet; 7 Bradshaw, standing 3556 feet; 5 N. J. Brooks, testing water 3020 feet; 1 N. A. Brooks, swedging casing 3242 feet; 1 J. B. Havens, awaiting orders 3757 feet; 2 R. O. Jackson, running 6-inch 3140 feet; 6 S. W. Lauderdale, lowered 6-inch to shut off water, total depth 3025 feet; 1 E. A. Lusk, ready to under-ream 3450 feet; 10 J. W. Parks, cleaning out 3287 feet; 11 J. W. Parks, cleaning out 3228 feet; B-4 J. W. Parks, drilling 3300 feet; 2 N. J. Rosenquest, waiting on orders 3385 feet; 1 J. T. Spear, standing 3410 feet; Texas & Pacific Coal & Oil Co.'s No. 21 Charles Binney, cleaning out 3409 feet; 20 Charles Binney, drilling 3200 feet; 1 W. D. Haney, cleaning out 3515 feet; 2 T. F. Litton, shut down for tools 3275 feet; 1 E. C. Miller, fishing 3775 feet; 1 J. I. Pace, cleaning out 3705 feet; 1 R. Shepherd, drilling 3300 feet; 2 D. J. Veale, bailing water 3665 feet; Tidal Oil Co.'s No. 1 Ennis, drilling 3535 feet.

Vulcan Oil Co.'s No. 2 Marston, drilling 3455 feet; 2 B. G. O'Neal, under-reaming 3550 feet.

Zelma Oil Co.'s No. 1 N. Russell, standing 3365 feet after shot; made flow some time ago, but bridged.

OTHER STEPHENS COUNTY OPERATIONS

American Oil Engineering Co.'s No. 4 Standford, shut down 2370 feet; 5 Stanford, drilling 2500 feet; Atlantic Oil Producing Co.'s No. 5 Dunlap, drilling 1425 feet; 1 Brazell, drilling 2565 feet; 2-A West, drilling 350 feet.

Bankers Oil & Gas Co.'s No. 2 McElroy, drilling 1200 feet; Bay Bros. Oil Co.'s No. 1 Yandell, setting casing 2340 feet; Big Seven Oil Co.'s No. 2 Bratton, drilling 2450 feet; Breckenridge Oil & Gas Co.'s No. 1 Jones, fishing 2200 feet; Brown & Co.'s No. 4 Heatley, drilling 1050 feet; 6 Heatley, drilling 2690 feet; 1-B Jones, trying to shut off water 805 feet.

Central Development Co.'s No. 1 Brown, drilling 2650 feet; O. H. Chapman et al's No. 2 Downing, drilling by tools 2450 feet; Chapman, Clark & Harbin's No. 1 Curry, straight-reaming 1972 feet; 2 Curry, under-reaming 1200 feet; 2 Peak, drilling 1100 feet; Consolidated Drilling & Refining Co.'s No. 2 Town Lot, drilling 1900 feet; Cooper-Henderson Oil Co.'s No. 1 Walker & Caldwell, shut down 2715 feet; Cosden Oil & Gas Co.'s No. 1 Jones, drilling 2740 feet; Crowell, Gant et al's No. 1 Williams, shut down 2416 feet.

Del-Tex Oil Co.'s No. 2 Smith, fishing 2870 feet; 1 Tucker, drilling 2265 feet.

Empire Gas & Fuel Co.'s No. 2 Stephenson, fishing 2600 feet; 3 Stephenson, fishing 1610 feet; 2 Wallace, straight-reaming 1660 feet.

Fensland Oil Co.'s No. 1 Harris, drilling 1100 feet; 2 Walker, cleaning out 2200 feet; 3 Walker, drilling 1095 feet; Fidelity Oil Co.'s No. 4 Harris, drilling 2250 feet.

Galvez Oil Co.'s No. 2 Ward, drilling 650 feet; Gulf Prod. Co.'s No. 1 Akin, preparing to set casing 1950 feet; 1 E. P. Akin, straight-reaming 2460 feet; 1 R. M. Akin, drilling 2020 feet; 1 Andrews, drilling 1200 feet; 1 Bryant, drilling 2775 feet; 1 Buchanan, cleaning out 1260 feet; 1 Fambrough, setting casing 2220 feet; 2 Fambrough, under-reaming 2285 feet; 12 Fincher, fishing tools 285 feet; 5 Harris, rebuilding derrick 1780 feet; 1 Milling, fishing 1100 feet; 2 Milling, drilling by casing 2221 feet; 1 Rassmusser, rebuilding rig 2275 feet; 1 Rush, shut down 2185 feet; 1 Stoker, fishing for bit 803 feet; 2 Stoker, drilling 1035 feet; 3 Stoker, shut down 265 feet; 4 Stoker, drilling 750 feet; 1-D Ward, cleaning out cave 1828 feet; 2-B Ward, drilling 950 feet; 1 White, preparing to pull casing 2197 feet.

Halleck & Whaley's No. 2 Beyer, shut down for casing spear; 3 Beyer, drilling 925 feet; Hamon & Sanke's No. 1 Guffey, drilling 1120 feet; T. W. Harris et al's No. 1 Turner, drilling 1175 feet; Healdton Oil & Gas Co.'s No. 1 Cockrell, drilling 1625 feet; Humble Oil & Ref. Co.'s No. 1 Browner, fishing for tools 760 feet; 1 W. H. Collins, drilling by tools 2765 feet; 2 Harris, fishing for casing 2195 feet; 2 Hart, swedging casing 1114 feet; 3 Hart, under-reaming 1340 feet; 2 Gilmore Jones, under-reaming 2735 feet; 1 Moon, preparing to pull casing 1584 feet; 1-B Thorp, drilling 2665 feet.

Jo-Se-Le Oil Co.'s No. 1 Rhodes et al, drilling 1400 feet.

Lambert et al's No. 1 Compton, drilling on iron 2628 feet; Letrice Oil & Gas Co.'s No. 1 Harris, drilling 650 feet; Lone Star Gas Co.'s No. 10 Warren, pulling casing to set packer 1822 feet; 1 Wright, under-reaming 2345 feet; Louisiana Stephens Oil Co.'s No. 1 Parks, drilling 1675 feet.

Magnolia Petroleum Co.'s No. 5 Brown, drilling 1125 feet; 6 Brown, setting casing 132 feet; 7 Brown, drilling 550 feet; 5 Frost, under-reaming 2335 feet; 1 Glenn, cleaning out 750 feet; 1 McCaulry, drilling 2850 feet; 2 Smith, drilling 500 feet; 5 Sullivan, drilling 2540 feet; 3 Trammell, drilling 1475 feet; 1 Van Winkle, drilling 1600 feet; Mascho & Maxwell's No. 1 Hitson, shut down 480 feet; Mid-Kansas Oil & Gas Co.'s No. 4 Jennings, drilling 2580 feet; 6 Jennings, drilling 1050 feet; 4 McMeen, drilling 1975 feet; 1 Nussbaum, fishing for casing 1500 feet; 1 Yarborough, drilling 2687 feet; 2 Yarborough, drilling 2105 feet; Montrose Oil & Ref. Co.'s No. 1 Harris, set casing 1930 feet; Moorman & Gholson's No. 3 Hand, drilling 300 feet.

New Domain Oil & Gas Co.'s No. 2 Thorp, drilling 650 feet.

Pierce Oil Corp.'s No. 3 Burk, fishing 1810 feet; 2 Smith, drilling 2950 feet; 7 Thomas, drilling 2475 feet; 1 Yandell, fishing 650 feet; Plateau Oil Co.'s No. 2 Thorp, fishing for tools 1603 feet; 3 Thorp, cleaning out 2905 feet; 4 Thorp, drilling 2410 feet; 5 Thorp, drilling 800 feet; 6 Thorp, drilling 610 feet; Prairie Oil & Gas Co.'s No. 1 Cook, drilling 2700 feet; 1 Dye, setting casing 2520 feet; 2 Gardenshire, drilling 1525 feet; 1 A. J. Jones, drilling 1925 feet; 2 Jones, drilling 2550 feet; 2 Riddle, drilling 650 feet; 3 Sorgee, cleaning out 750 feet; 4 Sorgee, fishing for under-reamer lugs 1665 feet; 11 Sparks, drilling 2585 feet; 13 Sparks, drilling 2200 feet; 14 Sparks, shut down 2590 feet; Premier Petroleum Co.'s No. 1 Fambrough, shut down 1200 feet; Pulaski Oil Co.'s No. 1 Thorp, drilling 900 feet.

Quakins Petroleum Co.'s No. 1 G. A. Langford, fishing for lugs 1500 feet.

Ranger Brooks Oil & Dev. Co.'s No. 1 Bradshaw, setting casing 2986 feet; 2 Bradshaw, drilling 2250 feet; Ranger Gulf Oil Corp.'s No. 1 Curry, fishing 1900 feet; Republic Refining Co.'s No. 1 Brown, setting casing 2805 feet; Romine Drilling Co.'s No. 1 Smith, shut down 2200 feet; Royal Stephens Oil Co.'s No. 1 Andrews, shut down 1100 feet.

Security Oil Ass'n's No. 1 Sayles, drilling 2260 feet; Shamrock Oil Co.'s No. 2 Veale, drilling 2940 feet; Sinclair Cons. Oil Corp.'s No. 2 Thorpe, straight reaming 1660 feet; Snowden & McSweeney's No. 1 Sylvanus, drilling 2285 feet; 2 Sylvanus, drilling 2650 feet; Southwestern Petroleum Co.'s No. 2 Toole, drilling 1305 feet; States Oil Corp.'s No. 1 Redfern, under-reaming 2020 feet; Sterling Oil Co.'s No. 1 Nussbaum, drilling 2385 feet; Strawn Oil Synd.'s No. 9 Stewart, setting casing 1660 feet; Texas Co.'s No. 5 Bradshaw, drilling 2690 feet; 2 N. A. Brooks, pulled casing 1150 feet; 1 Chaney, shut down 2975 feet; 3 Chaney, drilling 2350 feet; 2 Dixon, setting casing 512 feet; 9 Gholson, drilling 1675 feet; 1 J. H. Grimes, drilling 2975 feet; 3 Crosclose, shut down 1720 feet; 2 Havens, shut down for orders 2147 feet; 2 Houston, shut down 2535 feet; 2 W. F. Houston, drilling 2650 feet; 2 Keathley, shut down for casing 2410 feet; 2 Kennedy, shut down 2125 feet; 8-A Parks, drilling 950 feet; 20-A Parks, drilling 1125 feet; 1-B Parks, shut down for crew 1865 feet; 5 Pierce, under-reaming 2481 feet; 6 Pierce, drilling 2025 feet; 3 Rosenquest, shut down 2950 feet; 2 Sikes, drilling 2820 feet; 5 Stoker, drilling up iron 1600 feet; 1 Y. B. Stoker, drilling 1400 feet; 4 Thomas, preparing to set casing 2047 feet; 2 Vick, shut down for orders 1405 feet; 1 Watson, drilling 300 feet; 1 Wilson, cleaning out 2968 feet; Texas & Pacific Coal & Oil Co.'s No. 9 Hohertz, drilling 560 feet; 10 Hohertz, shut down for crew 750 feet; 9-A D. Hohertz, drilling 340 feet; 3-B Jennings, drilling 1900 feet; 2 Smith, setting casing 1496 feet; 1 Taylor, casing parted 1597 feet; 3 Veale, drilling by casing 1200 feet; Tex-States Oil Co.'s No. 1 Boles, drilling 2520 feet; Tidal Oil Co.'s No. 1 Goodwin, shut down 1380 feet.

Vulcan Oil Co.'s No. 1 O'Neal, drilling 2500 feet.

Washita Ranger Oil Co.'s No. 1 Walker, drilling 1900 feet; Western Exploration Co.'s No. 3 McNabb, shut down 2405 feet; 2 N. A. McNabb, shut down 1920 feet; White Seal Oil Co.'s No. 1 Lauderdale, shtu down feet; Johnnie White Oil Co.'s No. 1 Jordan, drilling 2610 feet.

ATTEMPT SOON IS TO BE MADE TO DEVELOP OIL SHALE IN MANCHURIA

Washington, D. C., June 28.—Large quantities of fuel oil exist at Fushun, Manchuria, according to reports just received by the Department of Commerce, and attempts are being made to develop sufficient interest in Japan to extract the oil. It is understood that the amount of shale at Fushun is estimated at thirteen hundred million tons, but it is not yet proven whether all of it is capable of producing good oil.

The main question is whether the deposit can be worked economically. Some authorities consider the work unprofitable if the oil contained is less than twenty grammes per ton; but even then, it is declared, there will be a profit if the percentage of ammonium sulphate is large. One thing in favor of mining the shale at Fushun is that coal mining is already under way there, and only a small expenditure would be required for the removal of the shale, as the process employed is exposed mining, and the shale must be removed anyway in order to reach the coal underneath. It is declared that there is no petroleum in Manchuria.

GAS GOES UP

An advance which doubled the price of West Texas natural gas at the well was made by the natural gas department of The Texas Company last week. The new price is 6 cents per 1000 cubic feet at the well.

Three Widely Separated Wells in Wilbarger County Show Oil

TESTS in Wilbarger County drew the spot light place on the north Texas screen last week. Showings of oil in three widely separated wells were recorded during the week.

Further indications that the Sigler Oil Company has something better than its No. 1 Wharton, still swabbing 100 barrels daily, came with the picking up of the sand in No. 2 Wharton at 2020 feet. The second well is about 3000 feet southeast of the first well. No. 1 was completed at 2040 feet. Casing is being set at No. 2 and the well will be drilled in soon.

Five miles west of the Sigler property the Lee Flowers well picked up a sand at 1770 feet on the Wharton track. This sand is to be tested.

These wells are south of the city of Vernon, the Sigler wells being about 12 miles from the town.

To the northwest of Vernon, seven miles, Frost, Pitts, Staley and associates have found a showing and indications of a pay sand on the Vaughn property. A standard rig is being put on this well. The depth of the sand at this test is 1850 feet.

Several other wells in Wilbarger county have indications of oil. In several instances a sand has been found around the 1200 foot level. So far it has not been thought worth while to test this, as the deeper strata offers indications of better pay dirt.

MISCELLANEOUS PRODUCTION

The fields of lesser production in the Wichita Falls district showed the following daily average of production last week:

	Barrels
K-M-A and Iowa Park	4900
Petrolia	350
Young County	340
Holliday	170
Total	5760

K-M-A COMPLETIONS

Boger, Ard & Maer's No. 2 K. & K., 250 barrels, 1775 feet.

Crude Oil Marketing Co.'s No. 4 Munger, 150 barrels, 1750 feet.

Cline et al's Nos. 4 Munger, 450 barrels, 1740 feet; 5 Munger, 600 barrels, 1745 feet.

S. C. Lowe, consulting engineer of Houston, was in Kingsville last week looking over the proposal of distributing the gas from the Kleberg County Oil & Gas Co.'s gasser. When pipe arrives the gas will be piped to that city and a complete system covering the city worked out.

K-M-A DRILLING REPORT

Wells in the K-M-A district are shut down at the depths below, unless otherwise reported:

Alberta Oil Co.'s No. 2 Ferguson, 1560 feet; Art, Boger, Ard & Haynes' No. 4 Munger, 1740 feet; 4 Munger, derrick blown down.

Bass & Dillard's No. 1 K. & K., swabbing 1770 feet; 2 K. & K., derrick; T. H. Bass' No. 2 Munger, bailing 1220 feet; Bland et al's No. 1 Munger, 1760 feet; Boger, Ard & Maer's No. 1 K. & K., fishing 1770 feet; 3 K. & K., 1770 feet; 1 Logan, star rig 1770 feet; 2 Logan, rigging up; Bryant & Burton et al's No. 1 Ferguson, drilling 1675 feet; 1 Munger, drilling 1920 feet.

Cline et al's No. 6 Munger, 1740 feet; 7 and 8 Munger, derricks; 1 Munger lease B, star rig 1740 feet.

Dee & Belport's No. 1 Mangold, 750 feet; 2 Mangold, drilling 600 feet; Dundee Oil & Dev. Co.'s No. 1 Tidwell, pumping 1860 feet; 2 Tidwell, 1840 feet; Duster Oil Synd.'s No. 1 Jackson, drilling 1760 feet.

Eastland Oil & Ref. Co.'s No. 1 Munger, drilling 1675 feet.

J. M. Franklin's No. 2 Munger, drilling 950 feet.

Gulf Prod. Co.'s No. 1 Gose, 2020 feet; 1-A Gose, drilling 700 feet; 2-A Gose, rig; 1 K. & K., 1910 feet; 5 Munger, 1730 feet; 6 Munger, 1750 feet; General Oil Co.'s No. 1 Parker, rigging up; Gynn & Allen's No. 2 Munger, 1400 feet.

Harrison & Thweat's No. 1 Logan, standardizing 1780 feet; 2 Logan, rigging up; 3 Logan, derrick; Haynes & Cannon's No. 1 Todwell, fishing 1810 feet; Hill & Roberts' No. 1 K. & K., drilling 300 feet; Herd & Ray's No. 1 Bowers, 2500 feet.

K. M. A. Oil Co.'s No. 2 Munger, 1780 feet; 3 Munger, standardizing 1740 feet; 4 Munger, 1760 feet; 5 Munger, derrick; 6 Munger, drilling 1540 feet; 7 Munger, rig; 8 Munger, rig; Keen & Woolf Oil Co.'s No. 4 Munger, 1540 feet; Keuhn & Iowa Park Oil Co.'s No. 1 Munger, 1750 feet; Krank & Belport's No. L-1 Mangold, 1500 feet.

Liquid Gold Oil Co.'s No. 1 Grant, drilling 1550 feet.

McAdams & Luse's No. 1 Parker, 1800 feet; M. B. M. Oil Co.'s No. 1 Griffin, derrick; Maer & Chappel's No. 1 K. & K., fishing 1750 feet; Magna Oil Co.'s No. 1 Lockridge, 600 feet; Munger & Verschoyle's No. 1 Munger, swabbing 1750 feet.

John O'Neil's No. 1 Munger, 1780 feet.

Panhandle Oil Co.'s No. 1 Munger lease 2, 1750 feet; Piedmont Oil Co.'s No. 1 Mangold, fishing 700 feet; William Priddy's No. 1 Logan, drilling 300 feet.

Bill Rowe Oil Co.'s No. 1 Parker, drilling 1950 feet; 2 Parker lease B, derrick.

Schow Pet. Co.'s No. 2 Parker, fishing 870 feet; Sharkle & Diffy's No. 1 Logan, 1780 feet; Smith et al's No. 1 Potter, cable tool derrick; Southern Prod. Co.'s No. 1 Munger, 500 feet.

Texas Chief Oil Co.'s No. 1-A Munger, derrick; Tex-Owa Oil Co.'s No. 1 Munger, 1760 feet; 2 Munger, 1750 feet; 3 Munger, derrick; Texhoma Oil & Ref. Co.'s No. 1 Munger, standardizing 1740 feet; 2 Munger, 1575 feet; 3 Munger, derrick blown down; 1 K. & K., drilling 1450 feet; 2 K. & K., rigging rotary.

Waggoner & Green's No. 2-A Munger, timber on ground; 2-B Munger, 1430 feet; 1-C Munger, 1800 feet; 2-C Munger, 700 feet; 3-C Munger, drilling 1600 feet; 4-C Munger, 1740 feet; Waller & Smith's No. 1 Kemp, 720 feet; Waller & Smith's No. 1 Kemp, 720 feet; Warrior Oil Co.'s No. 1 Kelm, drilling 2450 feet; Works & Grant's No. 1 Kemp, 640 feet; Way & King's No. 1 Munger, drilling 1750 feet; G. A. Works et al's No. 1 Hoge, 1790 feet; Waurika Oil Co.'s No. 2 Munger, 1700 feet.

Lewis M. Layne, vice president of the Layne & Bowler Company, a Houston concern which makes many appliances used by oil men, was killed in an airplane accident at Garden City, Long Island, Sunday night. The aviator in the machine at the time was badly injured. Mr. Layne left Houston about four years ago to open a branch at Memphis, after being reared in Houston. The body will be sent to Los Angeles, Calif., where the father, Leslie A. Layne, resides.

Wells Under Receivership Increase Production 10 Per Cent

UNDER the supervision of the federal receivership, oil wells in the disputed territory of Red River have increased their production 10 per cent. This is the ratio shown by figures in the office of Frederick A. Delano, the receiver, at Wichita Falls.

There are now 182 completed wells under the receivership, of which 108 are producing. During April this disputed territory showed a daily average production of 6000 barrels. For the month of June, under the receivership ,the daily average was 6700 barrels.

There is a bit of interesting history attached to the Burk-Senator well, the river bed well over which the dispute between Texas and Oklahoma started. When the receiver took charge of the territory, this well was not producing and was listed as junked.

"Our men fished and fished at it," said the receiver, "and from the material and tools taken out, there is no doubt about the well being junked."

But the fishing job proved successful, for the Burk-Senator well has produced at the rate of 75 to 100 barrels daily through June.

Plans are now complete to return oil properties of the patented lands back to the lease holders, who are to operate them under the supervision of the federal receiver. Contracts for this supervision are now being signed by the companies, and many of the wells were taken over July 1. Under terms of these contracts, the properties will be operated on a three-sixteenth royalty basis. That much oil will be impounded and left to be disposed of by the receiver, who will care for royalty owners.

Concerning complaints of oil company executives in regard to methods, Receiver Delano says he hopes to have the result of his administration prove the value of his methods.

"I came down here expecting to be cussed," he said. "I have been. Now I hope to so operate the properties that in the end there will be praise.

"It is a peculiar thing that a receivership works to the disadvantage of those under the receivership. A railroad receivership is not profitable to the bond holders. But it is sometimes necessary and if successful it is worth bringing about.

"They say that the oil business is peculiar, that it is a gamble. That may be true. But the principles of business should apply to it and make it profitable. While I came here knowing nothing of the oil business. I did have some idea of general business principles. It is from these that we hope to make the receivership profitable to holders of leases in the disputed territory.

"That we have had some success is shown from production figures of the wells we are operating. The wells of the district are now showing a daily average of 10 per cent more oil than they did during April, when they were under private control. If our efforts continue to bring success, we can increase that production. Field men of the office are still working on wells now listed as non-productive. At present there are 74 of these. No doubt some of them will be added to the producing class.

"In order to take over the operation of their properties, the companies are being required to sign a contract with the receiver. Like all contracts, it does not sound well when read. But the vicious parts of contracts are made, not for the man who desires to comply, but for the man who would evade correct methods of business.

"There have been some complaints. But the companies generally are signing and the wells on patented lands will soon be under operation of the owners. The properties can be taken over any time the conditions are met. It is the desire of the department that the first or sixteenth of a month be selected, in order that our books may be kept straight."

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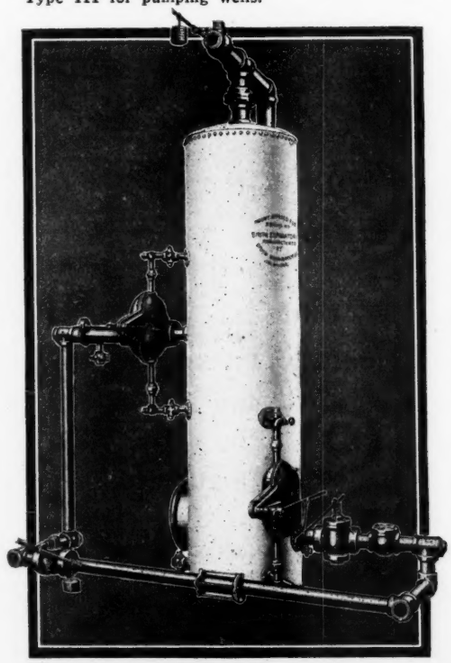

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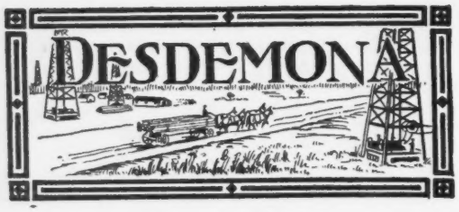


DESDEMONA PRODUCTION

The following is the daily average production of the Desdemona section during the week just ended:

	Barrels
Magnolia Petroleum Company	3,950
Mid-Kansas Oil & Gas Company	675
Sinclair Consolidated	490
Humble Oil & Refining Company	790
Sun Company	350
Miscellaneous	6,875
Total	13,130
Last week	13,723

STRAWN PRODUCTION

	Barrels
Texas & Pacific Coal & Oil Co.	850
Miscelalneous	575
Total	1425

NEW DEEP SAND

The new deep sand around 2800 to 3000 feet is proving up to the satisfaction of the operators. Gallagher & Lawson's No. 2 Dabney was drilled deper to 2880 feet and is good for 700 barrels. The same people's No. 1 Dabney was also drilled deeper and is making about 300 barrels. The Magnolia Petroleum Co.'s No. 2 Moorehead was drilled to the deeper sand and is good for 100 barrels, while the same company's No. 1 Odle is now swabbing better than 30 barrels after being drilled deeper.

DESDEMONA COMPLETIONS

Magnolia Petroleum Co.'s No. 6 W. R. Carruth is making 600 barrels at 2717 feet. No. 1 L. C. Echols at three feet in the lime, the top of which was found at 2718 feet, is making 250 barrels. Magnolia Petroleum Co.'s No. 2 Bearden is making 70 barrels after 60 quart shot. No. 6 on this tract is making 60 barrels.

In the Sipe Springs district, the Humble Oil and Refining Co. is pulling pipe to abandon at 2080 feet.

Humble Oil and Refining Company's No. 1 Hancock is pulling pipe to abandon after shot at 2800 feet. No. 1 Mahan is pulling casing to abandon after shot, total depth of hole 3130 feet.

DESDEMONA DRILLING REPORT

Atlantic Oil Producing Co.'s No. 1 Watkins, drilling 3060 feet.

Burkburnett Natural Oil Co.'s No. 1 Denney, shut down 630 feet.

Collin & Gillette's No. 1 Sturkie, shut down 3624 feet.

Frank Oil Co.'s No. 1 Teazer, drilling 1475 feet.

Humble Oil & Ref. Co.'s No. 2 Goss, fishing 3379 feet.

Magnolia Petroleum Co.'s No. 1 Echols, drilling 2550 feet.

Rucker Oil Assn.'s No. 1 Singleton, shut down 1900 feet.

Texas Star Oil Co.'s No. 1 Runkle, plugging back to shoot, 3150 feet.

Allen Dale Oil Co.'s No. 1 Flatt, shut down 2000 feet; Atlantic Oil Producing Co.'s No. 1 Fields, drilling 3275 feet; Atlantic Petroleum Co.'s No. 1 Pounds, shut down 2780 feet.

Big Jack Oil Co.'s No. 1 Bishop, cleaning out after shot 3010 feet; Butler Bros. Oil Co.'s No. 1 Weir, shut down 3120 feet.

Desdemona Cisco Oil Co.'s No. 1 Thurman, drilling 2859 feet.

Hughes O'Rourke's No. 1 Blackwell, shut down 3510 feet; Humble Oil & Ref. Co.'s No. 1 Mahan, shut down for shot 3130 feet; 1 Wright, shut down 2950 feet.

Iowa-Duke Oil Co.'s No. 1 Askew, shut down 3140 feet.

Magnolia Petroleum Co.'s No. 6 Beardon, drilling 2950 feet; 5 E. S. Davis, shut down for tubing 2816 feet; 2 Hobbs, shut down 2950 feet; 5 McArthur, shut down 2820 feet; 1 Miller, shut down 2900 feet; 4 Odles, shut down for company tools 2801 feet; Mid-Kansas Oil & Gas Co.'s No. 1 Hogg, drilling 2350 feet; 1 Reed, shut down for orders 3188 feet; Mid-Texas Oil Co.'s No. 1 Williams, shut down 2580 feet.

Powers et al's No. 1 Anderson, drilling 2450 feet.

Ranger Duke Oil Co.'s No. 1 Blackwell, shut down 1600 feet.

Spear Oil Co.'s No. 1 Blankenship, shut down 2985 feet.

Victory Oil Co.'s No. 2 Anderson, drilling 2900 feet.

Century Oil Co.'s No. 1 McMillan, shut down 2901 feet.

Texas & Pacific Coal & Oil Co.'s No. 1 Latimer, shut down 2900 feet; 1 Miller, shut down 3500 feet; 1 Smith, shut down 3780 feet; Townsend Oil Co.'s No. 1 Brown, fishing for casing 2800 feet.

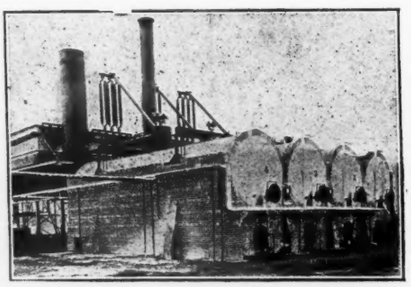
PURCHASERS SHOULD MAKE SURE THAT LAW HAS BEEN FOLLOWED

Purchasers of producing properties in Texas should be careful in making the deal that the company selling the property has complied with the rules for conservation laid down by the commission. The statement in part says:

"Violations of these rules and of the statute are punishable by severe penalties, and the state may, when suit for such penalties is brought, claim a lien on the oil property and the oil run from such property. This may embarrass the purchaser very much, hence all purchasers of oil properties or of crude oil production would do well to require a showing or statement that the former owners have not subjected themselves to the risk of penalties by reason of their failure or neglect to obey the law."

7 Plants

On every job of oil country manufacture "United" has its established reputation at stake



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So you can "gamble" on your job being done right—

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—Competent and well directed erecting crews to assure proper completion.

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A FAVORITE COMBINATION

Material listed below may be used to drill fifty or more wells without replacement.

- Moore's Steel Tubular Derrick
- Steel Tops and Crown Blocks
- Steel Foundation Frame Sills
- Steel Interior Framing
- Steel Bull Wheels
- Steel Calf Wheels
- Brake Band, Levers and Staples
- Bull Wheel and Calf Wheel Posts
- Steel Band Wheels
- Shafts for Band Wheels
- Steel Walking Beams

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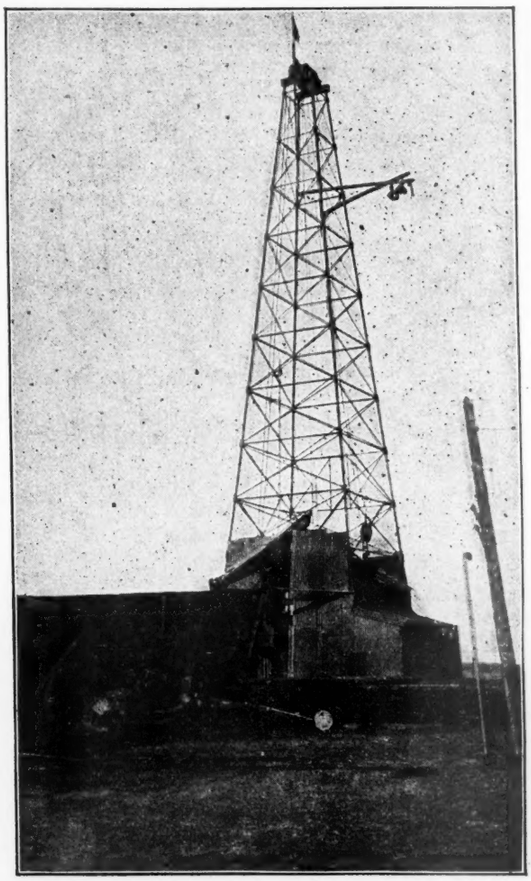

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You Buy Pipe Derricks and Get—

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FORT WORTH, TEXAS 435 Burton Bldg.
HOUSTON, TEXAS 1101 Carter Bldg.
BARTLESVILLE, OKLA. 212 First National Bank Bldg.
DENVER, COLO. First National Bank Bldg.
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Communicate with nearest office, or write or wire Tulsa, direct

Many Small Wells at Burk but Total Production Is Off

DESPITE a long list of completions last week, the northwest extension of the Burkburnett field fell off in production to the extent of more than 10,000 barrels daily. This loss is in comparison with the week just previous.

Small wells, all within the proven area, are on the completion list for the week. This lack of new wells in the newest part of the field, where flush production has been large, resulted in the production decrease for the week.

This extreme northwest part of the field is still in favor with operators. Of the 36 locations made during the week, one-third are on the Michna or Birk farms, the properties which have been responsible for continued big production from the Burkburnett field.

The value of this extension to the field can be realized from the fact that the Texas Company has about 100 acres of possible production on the C. Birk farm. Three wells were completed by this company on the Birk tract last week. In all 25 locations have been made on the property. About half of this number have been completed.

The sand under the Birk and Michna tracts is proving about 35 feet in thickness. Under the proper drilling that this property will have, it will prove productive for many years, if the sand is saturated to the extent that the sand in other parts of the fields has been.

BURKBURNETT COMPLETIONS

The following wells were completed in the Burkburnett field last week:

Burk Imperial Oil Co.'s No. 2 Waggoner, 25 barrels, 1610 feet.

Blue Bonnett Oil Co.'s No. 1 Taylor, 40 barrels, 1710 feet.

Bell Oil Co.'s Nos. 3 Taylor, 25 barrels, 1690 feet; 4 Taylor, 20 barrels, 1700 feet.

Burk King Oil Co.'s No. 2 George, 60 barrels, 1585 feet.

Burkburnett Oil & Leasing Co.'s No. 1 Taylor, 40 barrels, 1700 feet.

Burk King Oil Co.'s No. 1 Taylor, 75 barrels, 1660 feet.

Clara Burk Oil Co.'s No. 1 Schroeder, dry and abandoned, 2050 feet.

Clark, Olsen & Whaley's No. 3 Morgan, 50 barrels, 1610 feet.

Couch & Winfrey's No. 2 Daniel, 300 barrels, 1285 feet.

Clover Leaf Pet. Co.'s No. 3 Taylor, junked and abandoned, 1540 feet; Choates Oil Co.'s No. 2 George, 75 barrels, 1530 feet; Contractors Oil Co.'s No. 5 Vogel, 10 barrels, 1810 feet.

Diamond D. Oil Co.'s No. 3 Elsea, junked and abandoned, 1700 feet.

Danciger and Southern States Oil Co.'s No. 2 Michna, 200 barrels, 1580 feet.

Danciger Oil & Ref. Co.'s No. 1-A Michna, 250 barrels, 1650 feet; 1-B Michna, 200 barrels, 1665 feet; 1 Michna, 75 barrels, 1690 feet.

Evangeline & Gulf States Oil Co.'s No. 1 Michna, 400 barrels, 1760 feet; Empire Texas Oil Co.'s No. 1 Morgan, dry and abandoned, 1630 feet; E. M. F. Oil Co.'s No. 1 Beach, dry and abandoned, 1630 feet.

Foster & Watson's No. 1 Allen, 50 barrels, 1540 feet.

Godley Weber Oil Co.'s No. 17 Brannon, 75 barrels, 1700 feet.

Gulf Production Co.'s No. 1 Walling, 75 barrels, 1760 feet.

Howard Weber Oil Co.'s No. 6-B Elsea, 25 barrels, 1710 feet.

R. O. Harvey's No. 2-A Taylor, 40 barrels, 1685 feet.

Hagen et al's No. 1 Morgan, 75 barrels, 1625 feet.

Hull Tex Oil Co.'s No. 1 Michna, 200 barrels, 1650 feet.

I-Tex Oil Co.'s No. 7 Ramming, 75 barrels, 1760 feet.

Lone Star Oil & Refining Co.'s Nos. 3 Morgan, 25 barrels, 1580 feet; 4 Morgan, junked and abandoned, 1580 feet; 2 Taylor, 50 barrels, 1640 feet.

Lincoln Brewer et al's No. 2 Allen, 25 barrels, 1615 feet.

Magnolia Pet. Co.'s Nos. 37 Schmocker, 75 barrels, 1760 feet; 39 Schmocker, 20 barrels, 1730 feet; 63 Reilly, 20 barrels, 1640 feet; 11 Martin, 25 barrels, 1785 feet.

Middle States Oil Co.'s No. 7 Daniel, 50 barrels, 1290 feet.

Mantour Oil Co.'s No. 4 Morgan, 30 barrels, 1615 feet.

Mann Oil Co.'s No. 1 Roller, dry and abandoned, 1800 feet.

Oklahoma Gas & Pet. Co.'s Nos. 9 Taylor, lease 1, 50 barrels, 1660 feet; 12 Taylor, 50 barrels, 1630 feet.

Old Colony Oil Co.'s No. 1-A Morgan, 25 barrels, 1625 feet.

Panhandle Refining Co.'s Nos. 1 Morgan, 25 barrels, 1650 feet; 2 Morgan, 10 barrels, 1640 feet; 10 Morgan, 25 barrels, 1575 feet; 11 Morgan, 25 barrels, 1570 feet; 12 Morgan, 30 barrels, 1580 feet; 13 Morgan, 25 barrels, 1570 feet.

Southern Drilling Synd.'s No. 1 River Bed, 150 barrels, 1560 feet.

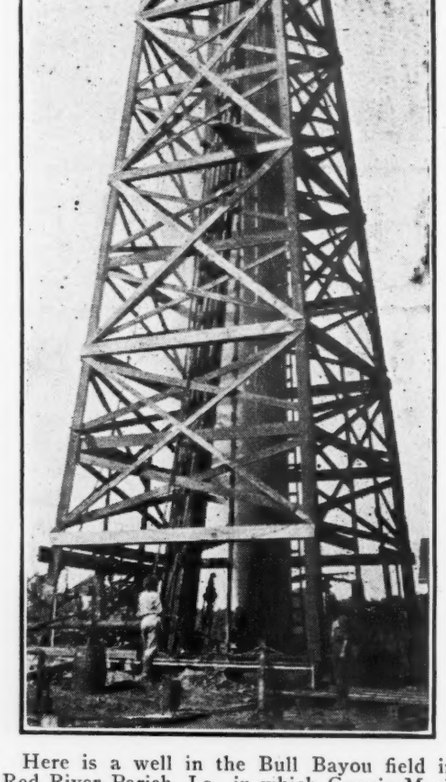
Southwestern Oil Corp.'s No. 1 River land, 100 barrels, 1630 feet.

Staley, Langford & Chenault's No. 1 Michna, 200 barrels, 1665 feet; Smith & Cooper's No. 1 Taylor, 25 barrels, 1710 feet.

Smith Drilling Co.'s Nos. 3-A Morgan, 75 barrels, 1625 feet; 4-A Morgan, 75 barrels, 1630 feet.

Texas Production Co.'s No. 2 Renner, 25 barrels, 1760 feet.

Texas Oil Corp.'s No. 1 Holtzen, dry and abandoned, 1655 feet.



Here is a well in the Bull Bayou field in Red River Parish, La., in which Connie Mack and the players on his team are interested in. It is Texas Ranger Producing & Refining Co.'s No. 1 Robinson in section 32-13-10. Mack and his team own one-half interest in the lease on which the well is located.

Tarver Oil Co.'s No. 2 Evans, dry and abandoned, 1610 feet.

The Texas Co.'s Nos. 15 Birk, 250 barrels, 1610 feet; 18 Birk, 350 barrels, 1605 feet; 23 Birk, 350 barrels, 1600 feet.

Texhoma Oil & Ref. Co.'s Nos. 2 Cropper, dry and abandoned, 1475 feet; 4 Daniel, dry and abandoned, 1400 feet.

W. A. Turner's No. 1 Roller, dry and abandoned, 1280 feet.

Texas Chief Oil Co.'s No. 1 Stephens, dry and abandoned, 2050 feet.

Webber Oil Co.'s No. 6 Elsea, 75 barrels, 1710 feet; 15 Brannon, 75 barrels, 1715 feet.

NORTHWEST BURKBURNETT WELLS NEARING COMPLETION

The following wells in the northwest extension of the Burkburnett field are nearing completion, all being below the 1500 foot level:

American Prod. Co.'s No. 2 Schmisseur; American Ref. Co.'s No. 3 Taylor; Associated Dev. Co.'s No. 2 Schmisseur.

Barkley & Meadows' No. 5-B Schmisseur; T. H. Bass' No. 1 River Bed; Bell Oil & Ref. Co.'s No. 2 Taylor; Blair 88 Oil Co.'s No. 2 L. Morgan; Blue Grass Oil Co.'s No. 1 Taylor; Bowers Oil Co.'s No. 1 Foster; Bradley Oil Co.'s No. 2 Michna; Burk Cameron Oil Co.'s No. 3 Foster; Burk Olden Oil Co.'s No. 1 Brannon; Burk Progressing Oil Co.'s No. 1 George.

Champion Oil Co.'s No. 1 River Bed; Clara Burk Oil Co.'s No. 1 Schroeder; Clay Sullivan et al's No. 1 Michna; Congressional Oil Co.'s Nos. 2 and 3 Siber; Columbia Pet. Co.'s No. 1 Vogel; Danciger Prod. Co.'s Nos. 1-C Michna, 1-D Michna and 2 Siber.

Emerick & Danciger's No. 1 Holtzen; E. M. F. Oil & Ref. Co.'s No. 3 Vogel; Everett & O'Neal's Nos. 1 and 2 Allen.

Farabee Oil Co.'s No. 1 Ramming; Franklin Drilling Co.'s No. 3 A. Morgan.

Galloway Oil Co.'s No. 2 Taylor; George Albon's No. 1 River Bed; Godley-Weber's No. 17 Brannon; Great Lakes Pet. Co.'s Nos. 3 and 4 Taylor; Green & Waggoner's Nos. 1 Foster and 1 Ferguson, and 1 Herchi; Gulf Prod. Co.'s Nos. 3 Elsea and 1 Michna; Gypsy Burk Oil Co.'s Nos. 1 Allen and 2 Vogel.

Hamilton Oil Co.'s No. 1 Horseman; Healdton Oil & Gas Co.'s No. 5 Evans; Humble Oil & Ref. Co.'s No. 1 Ferguson.

International Texas Oil Co.'s No. 3 Taylor; I-Tex Oil Co.'s No. 8 Ramming.

Jones et al's No. 1 L. Morgan; Jupiter Pet. Co.'s No. 1 J. Siber.

Kenoka Oil Co.'s No. 1 Poe sub. 3; King 8 Oil Co.'s No. 1 Waggoner; Kenoka Oil Co.'s No. 1 Fowler; Knight et al's No. 1 Birk.

Lewis & Melton's No. 2 Allen; Lincoln Brewer's No. 1 Myers; Lipscomb, Burbank & Ford's No. 1 Allen; Liquid Gold Oil Co.'s No. 1 River Bed; Livingston Oil Corp.'s No. 14 Taylor; Lone Star Oil Co.'s No. 2 River Bed; Long et al's Nos. 4 and 5 Vogel; Louisiana-Burk Oil Co.'s No. 1 Holtzen.

McMahon Oil Co.'s Nos. 2, 3, 4 and 5 River Bed and 1 Taylor; Magnolia Pet. Co.'s Nos. 25 Ramming, 5 Myers, 39 Myers; Manhattan Texas Oil Co.'s No. 1 Elsea; Judge Mooree et al's No. 1 Clark; Motex Oil Co.'s Nos. 2, 3, 4, 5, 6 and 7 Evans and 1 Siber; Middle States Oil Co.'s No. 2 Taylor; Missouri Oil Co.'s No. 2 L. Morgan; Moody Pet. Co.'s Nos. 2 and 3 Taylor; Mona Marie Oil Co.'s No. 6 Renner; Montour

Oil Co.'s No. 1 Siber; Morrison et al's No. 1 Snoddy; Mulligan, Mays & Knight's No. 1 Siber.

National Pet. Co.'s No. 1 Sparks; Nortex Oil Co.'s Nos. 6 and 7 Evans.

Okla. Gas & Pet. Co.'s Nos. 1 Taylor lease 3, 5 Taylor lease 4; Okla. Oil & Ref. Co.'s No. 10 Elsea; Old Dominion Oil Co.'s No. 4 Vogel; Osage Oil Co.'s Nos. 2 Elsea and 3 Vogel; Overland Oil Co.'s No. 1 Myers.

Panhandle Oil & Ref. Co.'s No. 2 Morgan lease B; Penn-Tex Oil Co.'s No. 1 Wadkins; Peoples Oil Co.'s No. 1 Taylor; Pollaska Oil Co.'s No. 1 Elsea; Powell-McClintock Oil Co.'s No. 1 Morgan; P. & P. Oil Co.'s No. 4 Michna; Proven Field Oil Co.'s Nos. 1 Chenault and 1 Hodges.

Queen Eight Oil Co.'s No. 2 Waggoner.

Ranger Extension Oil Co.'s No. 2 Renner; Reliance Oil Co.'s No. 1 Allen; Ryan Pet. Co.'s Nos. 7 and 14 Waggoner.

Security Prod. Co.'s No. 1 Morgan; Sheldon Lyons' No. 1 Taylor; Sibley Taylor Oil Co.'s No. 3 Michna; Sinclair Gulf Oil Co.'s Nos. 8 and 9 Yarborough; W. G. Skelly's Nos. 13 Waggoner and 1 Elsea; Smith et al's Nos. 1 Taylor and 1 Siber; Southern States & Danciger's Nos. 1 and 2 Michna; Southwestern Oil Co.'s No. 1 Vogel; J. I. Staley's No. 1 Foster; Staley, Langford & Chenault's Nos. 7 and 8 Ramming, 9, 10 and 12 Brannon and 2 Morgan; State Oil & Gas Co.'s No. 1 Taylor; Steiner Oil Corp.'s No. 2 Siber; Supreme Oil Co.'s No. 1 River Bed; Swift Drilling Co.'s No. 1 Slam.

Tar Baby Oil Co.'s No. 1 Elsea; Tandy Oil Co.'s No. 1 Roller; Texas Prod. & Pet. Co.'s Nos. 1 and 4 Renner; Texas & Okla. Pet. Co.'s No. 2 Elsea; Texas Seven Oil Co.'s No. 2 Brannon; Tyee Oil Synd.'s No. 1 Siber.

United Chief Oil Co.'s Nos. 2 and 3 Ferguson and 1 Herschi; United Southern Oil Co.'s No. 2 Schmockenberg.

Waurika Oil Co.'s Nos. 6 Elsea and 2 Taylor; Webber Oil Co.'s Nos. 8 Brannon and 3 Taylor; Weddell Oil Co.'s No. 1 Taylor; Whaley Oil Co.'s No. 1 Taylor; West Penn Oil Co.'s No. 2 Elsea; Western Drilling Co.'s No. 1 Holtsen; White Oil Corp.'s No. 5 Roberts; Wichita American Oil Co.'s Nos. 1 Morgan and 4 Vogel; Woodburn Oil Corp.'s Nos. 5 Evans, 1 and 2 Roberts.

SOUTHEAST BURKBURNETT DRILLING REPORT

Wells in the Texhoma pool, southeast of Burkburnett, are shut down at the following depths, unless other operations are listed:

Barkley & Meadows' No. 7 Daniel, standardizing 1300 feet; Burk Serrien Oil Co.'s No. 2 Powell, drilling 1320 feet; 3 Powell, drilling 1245 feet.

Camp Oil Co.'s No. 1 Perkins, 870 feet; Chappel & Owens' No. 10 Daniel, drilling in; 11 Daniel, drilling 1275 feet; 12 Daniel, drilling 665 feet; Couch & Winfrey's No. 6 Daniel, drilling 700 feet.

E. M. F. Oil Co.'s No. 2 Roller, shut down 1630 feet.

Gold Bond Oil Co.'s No. 1 Pry, shut down 780 feet; Gulf Prod. Co.'s No. 2 Daniel, 1300 feet.

Herd Oil Co.'s No. 1 Roller, 1060 feet.

Invader Oil Co.'s No. 1 Daniel, 1310 feet; 4 Daniel, drilling 1250 feet; 5 Daniel, drilling 500 feet.

McMahon Oil Co.'s No. 1 Wilhelm, 560 feet; Monarch Oil Co.'s No. 6 Daniel, 1320 feet; 8 Daniel, 1300 feet; 13 Daniel, 1290 feet; 2 Willis, 1320 feet; 5 Willis, shut down; 7 Willis, star rig.

O'Dell Oil Co.'s No. 1 Perkins, 1220 feet; 2 Perkins, derrick.

Penna-Burk Oil Co.'s No. 1 Willis, drilling 150 feet; Pioneer Oil Co.'s No. 4 Roller, drilling 1060 feet; Porter, Works & Dixon's No. 4 Daniel, drilling 1020 feet.

Quanah Oil Co.'s No. 3 Roller, drilling 400 feet.

Red Devil Oil Co.'s No. 1 Roller, 1200 feet; Robertson Oil Co.'s No. 1 Karrenbach, 1300 feet; Rogers Ref. Co.'s No. 1 Albright, 700 feet.

Shamrock Oil Co.'s No. 1 Daniel. derrick; Sinclair Oil Co.'s No. 1 Bilderbach, 1580 feet; 5 Daniel, 1510 feet; 8 Daniel, 290 feet.

Texas Interstate Oil Co.'s No. 1 Donohoe, 1220 feet; 2 Donohoe, 400 feet; 4 Daniel, drilling 1300 feet; Texana Prod. Co.'s No. 1 Dodson, 1310 feet; 3 Dodson, 200 feet; Texhoma Oil & Ref. Co.'s No. 3-B Daniel, drilling 1280 feet; 19 Daniel, drilling 1340 feet; 20 Daniel, drilling 1100 feet; 21 Daniel, drilling 1350 feet; 2 Powell, 1210 feet; 22 Daniel, drilling 1225 feet; 23 and 24 Daniel, derricks; 1 Willis, 1270 feet; 2 Willis, derrick; 3 Willis, location; Thrasher Oil Co.'s No. 1 Myers, swabbing 1330 feet; 1 Willis, 1510 feet.

TO DRILL IN MONTGOMERY COUNTY

A syndicate of Cleveland, Ohio, interests has purchased 616 acres of land in Montgomery county, near Porter and about two and one-half miles east of north of Humble field, for the purpose of oil well development. The property lies within a dome structure extending from the Humble fields to the Gulf, according to officials of the company.

BROKERS ORGANIZE

At a meeting Saturday at a luncheon served in the banquet hall of the Hotel Youree at Shreveport oil and gas lease, stock, royalty and production brokers of Shreveport made final arrangements for the permanent organization which was perfected Monday night of the Shreveport Brokers Association.

It was reported at the meeting that over fifty brokers had pledged themselves, during the week, to become members of the association, and that fully twice that many more would join upon the first call of the membership committee.

NOT so very long ago, *probably* 95% of the "washings" *were done* this difficult way—

Most of us can probably remember the "big iron kettle" all blackened by smoke, and the "firing" of it once per week; the rickety wash bench, and the old "brass board." Those were toilsome days for the good woman who did the "wash."

—But look at the difference of this progressive day—Hot water "on tap"—Electric driven washing machines that do the work of the "hands and board"—Clothes lines that may be **hung full** from one spot; electric ironers—and a thousand and one improvements over the old way.

—Yet should we have asked one of the "old way" washers during her time—she probably would have said unhesitatingly that "hers" was the only method, the best—'n everything, because it was the only way she was then familiar with.

The habits of the American people are progressive, and any short cut on labor or time quickly gets rapid adoption. Were the American people not inclined to give new methods and new devices a trial, inventions and progress would be retarded.

Reed Roller Bit and Reamer — completes the hole at one drilling and does it quicker.

A SHORT CUT IN DRILLING TIME AND TROUBLE

is found in the Reed Roller Bit and Reamer in drilling all hard formations. The rapid response to these new and improved drill tools is caused by their merits, clearly demonstrated by the progressive operators.

REED ROLLER BITS AND REAMERS ARE "DRILLING" THEIR WAY TO THE FORE-GROUND

"REED SERVICE MEANS NOW"

HOUSTON TEXAS

CLAIBORNE PRODUCTION

The average daily production of the Claiborne Field the past week was around 78,000 barrels, a decline of about 1000 barrels when compared with the previous week.

GILLILAND PRODUCTION

During the week ending with June 26, the Gilliland Oil Company wells in the Claiborne field made a daily average of 11,240 barrels. On June 23 the wells produced a total of 13,389 barrels while the lowest days was June 26 when the production fell to 7762 barrels, but several wells off that day being worked on. Gilliland is getting an average of about 3000 barrels daily from the Oakes lease.

WHITE PRODUCTION

The White Oil Corporation's daily production in the Claiborne Field the past week was 2960 barrels.

CLAIBORNE COMPLETIONS

Following the recent completion in the Claiborne field:

Gilliland Oil Co.'s No. 15A Shaw, 30-21-7, 225 barrels at 1340 feet, and No. 18-A Shaw, 30-21-7, 325 barrels at 1335 feet.

Gulf Refining Co.'s Nos. 13 Langston, 24-21-8, making 15 barrels at 1400 feet; 11 West, 20-21-7, 500 barrels at 1390 feet; 12 West, 525 barrels at 1400 feet, and 15 West 650 barrels at 1400 feet.

Louisiana Oil & Refining Co.'s No. 24 Jackson, 24-21-8, abandoned at 1490 feet.

Sinclair Oil Co.'s No. 6 Langston, 18-21-7, flowing 625 barrels at 1385 feet.

CLAIBORNE DRILLING REPORT

Atkins & French's Nos. 1 Murrell, 1-20-8, tested salt water, 2190 feet; 2 Murrell, sidetracking 2000 feet; Alto Oil Co.'s No. 1 Owens, 30-23-6, drilling 1570 feet; American Oil Co.'s No. 1 Shaw, 31-21-7, rig down; Arkansas Natural Gas Co.'s Nos. 119 Langston, 24-21-8, rigging to drill; 122 Langston, location; 137 Langston, 24-21-8, derrick; 99 Shaw, 30-21-7, arranging to pump 1400 feet; 136 Shaw, 36-21-7, reset 6 inch 1430 feet; 120 Sheeler, 16-21-7, drilling 2970 feet; Avery & Burgin's No. Kirkpatrick, 27-21-7, drilling 2150 feet.

Baird & Flynn's No. 1 Burnett, 36-22-8, shut down 2490 feet; W. A. Baird's No. 1 Brown, 15-20-7, shut down 2420 feet; Banks Oil Co.'s No. 1 Featherstone, 20-21-7, derrick; Benangus Oil Co.'s No. 1 Camp, 23-20-8, drilling 225 feet; Bowie Claiborne Oil Co.'s Nos. 6 Featherstone, 20-21-7, set 8 inch 900 feet; 8 Featherstone, drilling 850 feet; E. M. Brown's No. 1 Brooks, 9-20-7, fishing 1570 feet; Burk Homer Oil Co.'s No. 1 Buckner, 24-23-7, shut down 90 feet; Brook et al's No. 1 Burton, 18-21-7, derrick.

Caddo Claiborne Oil & Gas Co.'s No. 3 Gladney, 14-20-7, fishing 3010 feet; Caddo Central Oil & Ref. Co.'s No. 1 Manning 20-21-8; Calcasieu-Claiborne Oil Co.'s Nos. 1 Gryder, 14-21-8, shut down 1890 feet; 1 Langston, 19-21-7, drilling 1500 feet; Campbell & Hannah's Nos. 1 Gryder, 15-21-8, shut down; 1 Norton, 14-21-8, shut down 1420 feet; Circle Oil Co.'s Nos. L Alford, 2-22-4, derrick; 1 Kennedy, 9-22-4, shut down 2190 feet; Claiborne-Louisiana Oil Co.'s Nos. 2 McClung, 29-21-7, shut down 1925 feet; 3 McClung, waiting on casing 1390 feet; Conservative Oil Co.'s No. 1 McClung, 29-21-7, shut down 1040 feet; Curtis & Nelson's No. 1 Garrett, 18-21-7, arranging to test 1490 feet.

D'Arbonne Oil Co.'s Nos. 1 Langston, 19-21-7, shut down 1300 feet; 2 Langston, tested dry 1390 feet; Denman et al's No. 1 Harmon, 17-21-7, tested dry, 2125 feet.

Fawn Creek Oil & Gas Co.'s No. 1 Kinder, 35-22-7, shut down 590 feet; Folse et al's No. 2 McBride, 6-19-5, shut down 2100 feet; Fort Worth Oil & Ref Co.'s No. 1 Bonner, 15-21-8, drilling 1925 feet; Freedman & Rowe's Nos. 1 Hardy, 32-21-8, drilling 1925 feet; Freedman & Rowe's Nos. 1 Hardy, 32-21-7, shut down 2160 feet; Frost Oil Co.'s Nos. 4 Chatman, 31-21-7, arranging to pump 1375 feet; 11 Chatman, arranging to pump 2050 feet; A-1 Chatman, drilling 150 feet; 13 Chatman, derrick.

Gilliland Oil Co.'s Nos. 8 Jackson, 24-21-8, shut down 1410 feet; 14 Shaw, arranging to pump, 1355 feet; A-8 Shaw, shut down 2050 feet; A-9 Shaw, arranging to pump, 1385 feet; A-13 Shaw, set 6 inch 1240 feet; A-14 Shaw, preparing to drill in 1265 feet; C-3 Shaw, 25-21-8, shut down 1435 feet; C-6 Shaw, arranging to pump, 2050 feet; D-5 Shaw, 36-21-8, swabbing to test, 1470 feet; D-6 Shaw, arranging to pump 1480 feet; D-8 Shaw, drilling 1425 feet; D-9, D-10 and D11 Shaw, derricks and D-12 and D-13 Shaw, location; Gladys Belle Oil Co.'s Nos. 5 Featherstone, 20-21-7, drilling 750 feet; 7 Featherstone, drilling 700 feet; 1 O'Bannon, 19-22-4, fishing 2570 feet; Glassell & Marren's Nos. 5 Jackson, 13-21-8, fishing 1390 feet; 1 Shaw, 23-21-8, shut down 1400 feet; Gulf Refining Co.'s Nos. 1 Garrett, 18-21-7, bailing 1520 feet; 2 Garrett, drilling 1175 feet; 25 Langston, 24-21-8, set 6 inch 1325 feet; 26 Langston, derrick; 3 Weidman, 28-21-7, drilling 400 feet; 14 West, 20-21-7, drilling 1850 feet; 17 West, drilling 100 feet; 18 West, derrick; 19 West, drilling 700 feet; 20 West, drilling 600 feet; 21 West, drilling 300 feet; 22 West, rigging to drill; 23 West, derrick.

Hall et al's No. 1 Duke, 18-23-5, drilling 2500 feet; Harris Oil Corp.'s No. 1 Grant, 7-20-7, repairing rig 1090 feet; Harris Oil Co.'s No. 1 Harris, 12-20-8, derrick; Haynesville Oil & Gas Co.'s No. 1 Hyde, 3-22-8, setting 4½ inch 2150 feet; F. C. Henderson's Nos. 5 Garrett, 18-21-7, set 6 inch 1200 feet; 6 Garrett, arranging to test, 1440 feet; 7 Garrett, drilling 1400 feet; 9 Garrett, derrick; J. H. Henry's No. 1 Todwin, 22-21-8, location; Homer Amalgamated Oil Co.'s No. 1 Kinnebrew, 5-20-7, drilling 625 feet; Homer Caddo Oil Co.'s No. 1 Allen, 6-21-7, tested salt water 1500 feet; 2 Allen, location; Homer Consolidated Oil Co.'s No. 1 Bethany, 14-21-8, drilling 750 feet; Homer Mansfield Oil Co.'s No. 1 Hollingshead, 11-21-8, shut down 2375 feet; Homer Mutual Oil Co.'s No. 1 Shaw, 24-21-8, derrick down; Homer Oil Corp.'s Nos. 3 Shaw, 30-21-7, arranging to pump 2080 feet; 6 Shaw, shut down 2120 feet; 8 Shaw, derrick; Homestead Oil Co.'s No. 1 Tuggle, 36-21-8, shut down 1940 feet Homer Union Oil Co.'s Nos. 1 Shaw, 24-21-8, shut down 1430 feet; 2 Shaw, shut down 2010 feet.

Walter Keeble's No. 1 Sales, 5-22-7, shut down 1430 feet; Keen & Wolf Oil Co.'s Nos. 3 Norton, 13-21-8, arranging to pump 1410 feet; 4 Norton, derrick; 1 Pressley, 7-21-7, derrick; 1 Shaw, 23-21-8, derrick; E. L. King's No. 1 Featherstone, 20-21-7, derrick; Lane Oil Co.'s No. 1 Shaw, 24-21-8, drilling plug 1080 feet.

Lisbon Oil Co.'s No. 1 Patton, 36-21-5, drilling deeper, 1775 feet; Louisiana Oil Ref. Corp.'s Nos. 1 Harmon, 2-21-7, location; 11 Jackson, 23-21-8, shut down 1735 feet; 12 Jackson, shut down 1535 feet; 13, 14, 15 and 16 Jackson, locations; 17 Jackson, derrick; 18 Jackson, shut down 1450 feet; 19 Jackson, derrick; 20 Jackson, shut down 1840 feet; 26, 27, and 28 Jackson, all rigging to drill; 1 Langston, 19-21-7, shut down 1480 feet; 9 Langston, set 6 inch 1000 feet; 10-A Langston, set 6 inch 1060 feet; Lou-Penn Oil Co.'s No. 1 Smith, 8-21-7, arranging to test 1340 feet.

J. H. McWilliams' No. 1 Thompson, 16-22-4 derrick; Mayfair Oil Co.'s Nos. 1 Gandy, 29-20-6, drilling 3160 feet; 2 James, 14-22-4, setting 6 inch 2150 feet; S. A. McGeath's No. 1 Barber, 5-22-4, derrick; Mills Bennett's No. 1 Merritt, 32-21-7, derrick.

T. S. Neal's No. 1 Garrett, 18-21-7, rigging to drill.

Ohio Valley Homer Oil Co.'s No. 1 Gillis, 32-21-7, plugging back to 2090 feet to test.

Pan-American Oil Co.'s No. 1 Prye, 36-20-8, sidetracking 1190 feet; Paramount Pet. Co.'s Nos. 9 Shaw, 30-21-7, fishing 1550 feet; 10 Shaw, drilling 800 feet; J. M. Parker's No. 1 Harmon, 16-21-7, lost hole 1930 feet; 2 Harmon, drilling 600 feet; Production Oil Co.'s Nos. 1 Bonner, 15-21-8, derrick; 1 Burton, 18-21-7, dry, 1690 feet; Producers & Refineries Corp.'s No. 1 Wilburn, 11-19-7, location; Prudential Oil Co.'s No. 1 Norman, 22-21-8, shut down 2290 feet.

Ranger-Homer Oil Co.'s No. 1 Norman, 5-21-6, derrick; Rapides Claiborne Oil Co.'s No. 1 Shaw, 31-21-7, derrick; Rebel Oakes Oil Co.'s No. 1 Coleman, 18-20-5, location abandoned; 1 Featherstone, 20-21-7, derrick; Richardson Pet. Co.'s No. 1 Bridgeman, 12-21-8, drilling 1495 feet; Rowe et al's No. 2 Hardy, 31-21-7, shut down 2100 feet; 4 Hardy, arranging to pump 1425 feet; Rowe Oil Corp.'s No. 6 Shaw, 30-21-7, location; 8 Shaw, shut down 1500 feet; 9 and 11 Shaw, locations; 10 Shaw, derrick; 21 Shaw, tested salt water 2010 feet; 1 Wilson, 13-21-8, drilling 3070 feet; Roxana Pet. Corp.'s No. 1 Meadow, 3-23-7, drilling 1250 feet; 1 Taylor, 14-23-8, dry 2890 feet.

Section 30 Oil Co.'s No. 1 Pressley, 11-21-8, derrick; Simms Oil Co.'s No. 5 Garrett, 18-21-7, set 6-inch 1325 feet; 6 Garrett, set 6-inch 1250 feet; 7 Garrett, drilling 750 feet; 10 Garrett, set 6-inch 1250 feet; 11 and 12 Garrett, rigging to drill; 13 and 14 Garrett, derricks; 3 Japet, 32-21-7, drilling 2100 feet; 6 McClung, 29-21-7, derrick; A-1 McClung, location; Sinclair Oil Co.'s No. 1 Garrett, 17-21-8, fishing 1560 feet; 2 Garrett, drilling 1050 feet; 3 Garrett, derrick; 7 Langston, 18-21-7, set 6-inch 1120 feet; 8 Langston, setting 6-inch 1110 feet; 6 Oakes, 31-21-7, derrick down, location abandoned; Standard Oil Co.'s No. 1 Featherstone-Palmer, 20-21-7, shut down 1490 feet; 2 Featherstone-Palmer, set 6-inch 870 feet; 1 Gryder, 17-21-7, rigged to drill; 8 Langston, 19-21-7; 12 Langston, derrick; 14 Langston, drilling 1150 feet; 15 Langston, 14-21-8, derrick; 16 Langston, set 6-inch 965 feet; 17 Langston, running tubing 1400 feet; 18 Langston, 19-21-7, location; 11 Lowenberg, 24-21-8, derrick; 14 Lowenberg, arranging to pump, 1430 feet; 15 Lowenberg, bailing 6-inch 1170 feet; 16, 17 and 19 Lowenberg, derricks; 20 Lowenberg, drilling 325 feet; 21 Lowenberg, set 6-inch 1110 feet; 23, 24 and 25 Lowenberg, derricks; 3 Mitchell, 29-21-7, drilling 1300 feet; 8, 10, 11, 12 and 14 Guy Oakes, 29-21-7, locations; 13 Guy Oakes, derrick; 7 Shaw Palmer, 30-21-7, derrick; 9 Shaw-Palmer, 25-21-8, testing 1390 feet; 10 Shaw-Palmer, drilling 1800 feet; 11 Shaw Palmer, derrick; 12 Shaw-Palmer, set 6-inch 1240 feet; 13 and 14 Shaw-Palmer, derricks; 15 Shaw-Palmer, drilling 950 feet; 16 Shaw-Palmer, derrick; A-5 Shaw Palmer, 31-21-7, arranging to pump, 1340 feet; A-7 Shaw-Palmer, drilling 800 feet; A-8 Shaw-Palmer, testing 1340 feet; A-9 Shaw-Palmer, derrick; 1 Wheaton, 23-21-7, set 6-inch 1060 feet; 2 Wheaton, derrick; 2 Wheeler, 17-21-7, drilling 1000 feet; 4 Wheeler, set 6-inch 1185 feet; 3 and 5 Wheeler, derricks.

Texarkana-Homer Oil Co.'s No. 1 Bonner, 22-21-8, derrick; The Texas Co.'s No. B-5 Langston, 19-21-7, shut down 1050 feet; 1 Phillips, 4-20-8, pulling casing 3100 feet; 2 Shaw, 31-21-7, derrick; 4 Shaw, derrick; Timpson Oil Co.'s No. 1 McClung, 29-21-7, shut down 1530 feet; 2 McClung, shut down 1500 feet; 3 McClung, derrick; Temple-Homer Oil Co.'s No. 1 Garrett, 18-21-7, arranging to pump, 1460 feet; 2 Garrett, drilling 900 feet; 3 Garrett, derrick; Trinity Oil Co.'s No. 1 Bullock, 2-20-7, derrick; Transcontinental Oil Co.'s No. 1 Lay, 35-22-6, drilling 700 feet; Tulsa Oil & Gas Co.'s No. 1 Garrett, 18-21-7, bailing 1290 feet; 2 Garrett, derrick.

United States Drilling Corp.'s No. 1 Kinnebrew, 33-

(Continued on page 64.)

Wildcats Have Reported Oil in Seven Counties Near Shreveport

SINCE the first of the year, seven wildcat wells, in seven counties and three states, have been brought in in the Shreveport territory. Probably twice that number are making showings that almost justify calling them producing wells, and half of them doubtless will be proven as such before many months.

To lead off with, The Texas Company brought in five or six miles southwest of the Bull Bayou field its Giauque No. 2 in De Soto Parish, Louisiana. Not long afterwards Boisseau brought in his well seven miles east of Shreveport, to a stage where it was proven a producer. The Gulf Refining Company then got a second wildcat producer on the Saul Jernigan well in Panola County, Texas, which was followed soon afterwards by S. S. Hunter getting what is claimed to be the initial well in a new field near Stephens in Ouachita County, Arkansas.

The next wildcat to come in was the gasser drilled by the Constantine Refining Company near Eldorado, in Union County, Arkansas. A few weeks later, Shine and Dillon brought a new producing sand near Teneha in Shelby County, Texas, and last week the Gulf Refining Company brought in its Barlow well near Waskum in Harrison County, Texas.

All these wildcats are estimated to be good for from 20 to 100 barrels per day, and each is the first producer in a new field.

Giles & Herring

Acreage—Royalties—Production

Oil Properties

Bought, Sold, Developed

Operations in Louisiana and East Texas

Correspondence invited

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CADDO PRODUCTION

The daily average production of the Caddo field in North Louisiana last week was around 17,000 barrels, a decline of 100 barrels when compared with the previous week.

CADDO COMPLETIONS

One completion was reported from the Caddo field the past week. The Gulf Refining Co.'s No. 195 Ferry Lake, 14-20-16, was completed for a 25 barrel pumper at 2200 feet.

CADDO DRILLING REPORT

Ansonia Oil Co.'s Nos. 2 Dickson, 36-21-15, set 6 inch 2180 feet; 1 State, 13-21-15, arranging to pump 2280 feet; Allied Oil Co.'s No. 13 Land, 4-20-15, arranging to pump 2155 feet; Allies Oil Co.'s No. 1 Guy, et al, 29-21-15, shut down 2280 feet; Arkansas Natural Gas Co.'s No. 109 Green, 3-20-15, location.

J. L. Bullock, Trustee's No. 3 and 4 Noel, 19-21-14, derrick; Banks Oil Co.'s No. 3 Clark, 15-21-15, hole junked 2300 feet; 3 Spell, 15-21-15, fishing 2300 feet; J. W. Barnes' No. 1 Murray, 28-21-15, drilling 2250 feet; Bedillion et al's No. 1 Christian, 31-21-15, arranging to pump 2280 feet.

Cherokee Oil & Gas Co.'s No. 5 Youree, 12-21-15, arranging to pump 2300 feet; 6 Youree, fishing 2240 feet; Caddo Central Oil & Refining Co.'s No. 7 Noel, 25-21-15, derrick.

Dixie Oil Co.'s Nos. 27 Robertshaw, 13-21-15, derrick; 33 and 34 Robertshaw, locations; 9 Slattery, 28-21-15, drilling 1150 feet; 29 Robertshaw, 14-21-15, drilling 2300 feet; 32 Robertshaw, 13-21-15, set 6 inch 2250 feet; Doan Oil Co.'s No. 1 Louisiana Lumber Co. 6-20-15, tested salt water 2240 feet.

Fortuna Oil Co.'s No. 8 Robertshaw, 23-21-15, derrick; Fullilove et al's No. 1 Clingman, 1-15-15, shut down 2890 feet.

Globe Oil Co.'s Nos. 12 Dickson, 27-20-15, location; 7 Youree, 26-20-16, derrick; Greer Oil Co.'s No. 28 Jolly, 22-22-15, derrick; Gulf Ref. Co.'s Nos. 198 Ferry Lake, 13-20-16, derrick; 4 Heilperin, 21-20-16, drilling 200 feet; 185 Ferry Lake, 22-20-16, arranging to pump 2250 feet; 193 Ferry Lake, 13-20-16, arranging to pump, 2240 feet; 196 Ferry Lake, 14-20-16, setting six inch 2030 feet; 197 Ferry Lake, 13-20-16, setting six inch 2030 feet; 199 Ferry Lake, 29-20-16, drilling 1645 feet; Great Southern Producing & Refining Corp.'s No. 1 Ellerbe, 9-20-15, arranging to pump, 2190 feet.

Humble Oil & Refining Co.'s No. 7 Noel, 19-21-14, derrick; Homa-Okla. Oil Co.'s No. 3 Allen, 35-21-15, shut down 2225 feet.

Invader Oil Co.'s No. 1 Ellerbe, 34-19-14, drilling 2050 feet.

Kendall & Dixon's No. 1 Jeter, 8-19-16, setting six inch 2050 feet.

Louisiana Consolidated Oil & Ref. Co.'s No. 17 Hoss, 24-22-15, drilling 500 feet and 11 Peak, 23-22-15, drilling 900 feet; Lou-Tex. Oil Co.'s No. 4 Raines, 15-21-15, derrick.

Old Settler Oil Co.'s No. 10 Lynn, 12-12-15, drilling

CLAIBORNE DRILLING REPORT

(Continued from page 62)

21-7, set 6-inch 1820 feet; 2 Kinnebrew, shut down 1570 feet; 1 Wilson 13-21-8, drilling 1300 feet; 3 and 4 Kinnebrew, rigged to drill.

Vanada Oil & Ref. Co.'s No. 11 Langston, 24-21-8, set 6-inch 1130 feet.

Warwick et al's No. 1 Fields, 22-19-5, to resume drilling 2225 feet; W. K. Oil Co.'s No. 1 Crow, 33-21-8, drilling 1990 feet; White Oil Corp.'s No. 1 Kings, 13-21-8, drilling 2440 feet; 1 Norman, 15-21-8, drilling 2600 feet; 2 Norman, location; 9 Oakes, 30-21-7; 11 Oakes, testing 1380 feet; 14 Oakes, testing 1380 feet; 1 Shaw, drilling 2050 feet; 6 Wheaton, 23-21-8, arranging to pump, 1410 feet; 7 Wheaton, arranging to pump, 1400 feet; 8 Wheaton, drilling 1300 feet; Wichita Oil Co.'s No. 1 Thomas, 15-21-7, derrick; Wonderfield Oil Corp.'s No. 2 Featherstone, 20-21-7, drilling 500 feet; Worlds Pet. Co.'s No. 1 Moreland, 3-20-7, shut down 2510 feet.

Zoder & Hincey's No. 1 Wheaton, 14-21-8, reaming 1600 feet.

Isaac Muslow's No. 1 Liebman, 31-21-15, setting six inch 2100 feet.

Standard Co. of New Jersy Produces 49 Per Cent of Oil

THE Standard Oil Company of New Jersey and its affiliated companies refine approximately 49 per cent of the oil refined in the United States, and produce only about 17 per cent of the total oil produced, according to figures compiled by the Federal Trade Commission in its report to Congress recently.

The following table shows the growth of the refining industry in the past three years:

	No. Refineries	Daily Capacity (Aggregate) barrels
1918	267	1,118,155
1919	289	1,295,115
1920	378	1,530,565
(Under construction on January 1, 1920.)		
	99	263,500

In 1911 the "Standard" group refined 80 per cent of the crude refined in the United States. In 1919 the same interests refined 49 per cent of the crude in the United States.

The practice of "Paying Premiums" by independent refiners, and purchasing agencies belies any conclusion that there is not real competition for the crude that is produced in the country.

In the sale and distribution of refined products, there is no keener rivalry in any business in the country. Marketers and jobbers have established their lines of clients throughout country, and the competition between them as well as between some of the larger refining companies, has built up a business based purely upon competition in trade.

Regarding the Demand

In 1919 production and consumption of crude oil was as follows:

Production, 377,719,000 barrels.
Consumption, 375,559,000 barrels.

Since August 1919, production and consumption have been at the following rates:

Consumption, 436,343,265 barrels.
Production, 402,626,025 barrels.

Increased Demand for Gasoline

The following table shows the growth in the number of automobiles in the United States each year and the increase of the oil production of the United States, the percentage of increase of each, and the number of barrels of crude oil produced per car each year:

	No. of Automobiles end of year	Per cent of increase over previous year	Prod. of Crude Oil (42 gal. bbls.)	Per cent of increase over previous year
1911	700,000		220,449,391	
1912	1,020,000	45%	222,935,044	1%
1913	1,280,000	25%	248,446,230	11%
1914	1,711,338	34%	265,762.535	7%
1915	2,445,664	42%	281,104,104	5%
1916	3,544,952	45%	300,767,158	7%
1917	5,085,959	43%	335,315,601	11%
1918	5,945,442	17%	355,927,716	6%
1919	7,558,848	27%	377,719,000	6%
Estimates:				
1920	9,983,848	32%	402,626,000	7%
1921	12,000,000	20%	430,809,000	7%

Average increase of automobiles.....33%
Average increase of crude oil..... 7%
Increase 1919 over 1911 in cars.....979%
Increased 1919 over 1911 in production.. 71%

2325 feet Planters Oil Co.'s No. 3 Noel, 7-21-14, arranging to pump, 1850 feet.

Reisor Oil & Refining Co.'s Nos. 1 Reisor, 12-16-15, sidetracking 2700 feet; 2 Reisor 1-16-15, derrick; Republic Oil & Gas Co.'s No. 2 Sellington, 29-21-15, shut down 1750 feet; Rice Growers Oil Co.'s No. 1 Bradford, 36-21-15, shut down 2200 feet; Royal Prod. & Ref. Co.'s No. 1 Pardue, 1-21-16, arranging to pump 1045 feet; D. C. Richardson's Nos. 3 Huckaby, 11-21-15, derrick; 4 Johnson, 23-21-15, derrick; 2 Player, 26-21-15, derrick.

Sun Co.'s No. 121 Spell, 29-21-15, derrick down; 130 Bradford, 35-21-15, shut down 2325 feet; Shamrock Oil Co.'s No. 3 Herndon, 22-21-15, arranging to pump, 2285 feet; Snell et al's No. 1 Robinson, 18-16-12, shut down 2930 feet; Swann Oil & Gas Co.'s No. 1 Swann, 20-21-14, shut down 920 feet; Supreme Oil & Gas Co.'s No. 1 Hughes, 15-20-15, reaming 1885 feet.

Tex-La-Homa Oil Corp.'s No. 1 Glassell, 25-20-15, setting 6 inch 2185 feet; The Texas Co.'s Nos. B-8 W. E. Noel, 14-21-15, arranging to pump 2500 feet; 40 and 41 Caddo Mill & Lumber Co. 23-21-15, derricks; 1 Gill & Lipscomb, 19-16-16, location; 4 Herndon, 22-21-15, derrick; 5 Herndon, 14-21-15, derrick; 6 Mabry, 15-21-15, derrick; B-5 W. E. Noel, 14-21-15, derrick.

Webster & Roy's No. 1 Hall, 23-15-16, drilling 1000 feet; Wasson Oil & Gas Co.'s No. 2 Wasson, 26-19-15, drilling 2975 feet.

CAN LEASE MORE THAN 4800 ACRES INDIAN LANDS, SAYS A NEW RULE

Washington, D. C., June 28.—Secretary of the Interior Payne has revoked the regulation limiting to 4800 acres to acreage which any one oil operator is permitted to acquire in the five civilized tribes in Oklahoma.

When the question of leasing restricted Indian land belonging to members of the five civilized tribes was first taken up by the Department of the Interior it was decided that the acreage which any one person, firm or corporation would be permitted to lease would be limited to 4800 acres. This was done with the purpose in view of preventing a monopoly of the oil and gas deposits. This rule has been enforced for a number of years, with the result that a large number of persons and firms are interested as lessees in oil lands belonging to Indians in Eastern Oklahoma.

In the meantime many of the Indians have had the restrictions removed from their land and there is at present only about 15 per cent of the land allotted to members of the five civilized tribes which remains under the jurisdiction of the Interior Department. In view of the fact that so small a proportion of the land is restricted at present and as there are so many competing oil operators in the field, the danger of monopoly is eliminated. It is also believed that revoking the 4800 acre rule will result in the Indians receiving a larger income from their oil lands.

RAIROAD SERVICE INTO BRECKENRIDGE

Breckenridge, the new oil capital of Stephens County, celebrated her first real, honest to goodness railroad train arrival last Sunday, when service over the Wichita Falls, Ranger and Fort Worth Railroad was inaugurated. The arrival of the first train was witnessed by hundreds of citizens and visitors.

The Wichita Falls, Ranger and Fort Worth Railroad runs from Wichita Falls to Ranger to Dublin—or rather will run that route when completed, and will serve a vast oil territory which has depended heretofore principally on trucks and tractors to move its oil supplies.

The road now has freight and passenger accomodations from Breckenridge to Ranger and Dublin.

SOPH

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Just as important to the REFINER to know the temperature of his STILLS as it is for the CANNER to know the temperature of his CANS. About ninety per cent of both industries get best results from *Tycos* thermometers.

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New and Interesting Producer Reported Southwest of Field

THE report from the Palmer Trust Co.'s No. 1 Jenkins, section 21-12-11, about one mile southwest of production in DeSoto Parish, is interesting in that it states that the well is making about 800 barrels of oil. There are a number of gassers to the north and south of this well, all having a depth of around 2500-2600 feet. In the Palmer well the six inch was set at 2545 feet and the pay was found a considerable depth below.

Outside of this well, the Bull Bayou record for the week has been without special incident. The production of the old wells are holding up nicely and development work is progressing as well as could be expected with the present material shortage, or rather the shortage of transportation to get material to the point where it is needed.

BULL BAYOU PRODUCTION

The daily average production of the Bull Bayou field for the past week was about 17,500 barrels, a small increase over the previous similar period.

BULL BAYOU COMPLETIONS

The following completions reported from Red River Parish in the Bull Bayou field, no completions coming from DeSoto Parish:

Depositors Oil Co.'s No. 19 Polly, 6-12-10, 30 barrels at 2790 feet.

Pritchard et al's No. 2 Ardis, 1-12-11, making 60 barrels at 2765 feet.

Sun Co.'s No. 3 Nelson, 6-12-10, pumping 35 barrels at 2810 feet.

BULL BAYOU DRILLING REPORT

DE SOTO PARISH

Anchor Pet. Co.'s No. 1 Baker, 3-11-14, arranging to pump; Arkansas Natural Gas Co.'s No. 133 Williams & Elam, 21-12-11, drilling 1550 feet; 134 Williams & Elam, 21-12-11, rigging to drill; Atkins & French's No. 1 Mason, 28-12-11, bailing, showing oil and gas 2675 feet.

Boone Oil Co.'s No. 1 Giauque, 8-11-11, arranging to pump, 2800 feet; 2 Giauque, 5-11-11, drilling 150 feet; 3 Giauque, 7-11-11, location; Brazos River Oil Corp.'s No. 2 Brownsfield, 4-12-12, drilling through liner 2597 feet; 1 Roach, 31-13-12, setting 4½-inch 2665 feet; Bull Bayou King Oil Co.'s No. 1 Porter, 10-13-12, drilling 1400 feet.

De Soto Oil & Ref. Co.'s No. 1 Terrell, 4-12-12, drilling 2760 feet; 2 Terrell, 4-12-12, location.

Ertel Oil Co.'s No. 1 Hoell, 15-13-14, shut down.

Faps Oil Co.'s No. 1 Williams & Elam, 21-12-11, drilling 300 feet; Fortuna Oil Co.'s No. 2 Chaffraix, 25-12-11, setting 6-inch 2300 feet; 3 Chaffraix, 25-12-11, drilling 2000 feet.

Giles & Herring's No. 1 Bonds, 22-12-11, drilling 2625 feet; Gilliland & Foster's No. 3 King, 23-12-11, derrick; Gulf Refining Co.'s No. C-16 Willis Williams, 32-13-11, setting 6-inch 750 feet; C-17 Willis Williams, 29-13-11, derrick.

Hartman Oil Co.'s No. 1 Palmer, 3-11-14, shut down 1850 feet; Huntley Synd.'s No. 1 Hill, 4-10-13, derrick; 1 Harris, 6-10-13, rigging to drill.

Ben Johnson et al's No. 1 Roberts, 36-12-13, derrick.

Lockwood Oil Co.'s No. 1 School Land, 16-12-11, fishing 2800 feet; Louisiana Premier Oil Co.'s No. 1 Randall, 9-12-12, drilling 300 feet.

McCormick & Smith's No. 1 Giauque, 9-10-11, fishing 3130 feet.

Newman & Cowder's No. 1 Burford, 28-14-14, fishing 2990 feet.

Palmer Trust Co.'s No. 2 Jenkins, 21-12-11, setting 6-inch 2565 feet; Pilgrim Oil Co.'s No. 1 Ramsey, 33-13-16, drilling 2450 feet; Producers Oil & Gas Co.'s No. 1 Husson, 11-12-12, setting 6-inch 2300 feet.

Schaeffer & Gautlin's No. 1 Furman, 36-15-14, drilling 3000 feet; Scott et al's No. 1 Patterson, 34-11-14, derrick; Sinclair Oil Co.'s No. 1 Fortson, 4-12-11, drilling 2385 feet.

Texas Homer Oil Co.'s No. 1 Williams, 3-12-12, drilling 2150 feet; 2 Williams, 3-12-12, derrick; Texas Pet. Co.'s No. 1 Jenkins, 3-12-12, shut down 1300 feet; Texas Standard Oil Co.'s No. 1 Sutherland, 19-12-24, drilling out plug 2690 feet; The Texas Co.'s No. 3 Giauque, 1-11-12, drilling 1200 feet; 1 Roberts Brown Lumber Co., 4-11-12, shut down 2863 feet; 2 Roberts Brown Lumber Co., 17-11-12, drilling 3125 feet; 24 Wemple, 22-12-11, derrick; 25 Wemple, 23-12-11, location; 26 Wemple, 22-12-11, drilling 2435 feet.

United Texas Pet. Co.'s No. 1 Giauque, 8-11-11, shut down 140 feet.

Van Steel Oil Co.'s No. 1 Caraway, 23-12-16, drilling 2275 feet.

RED RIVER PARISH

American Oil Co.'s No. 2 Nelson, 31-13-10, set 6-inch 2540 feet; 3 Nelson, drilling 2400 feet; 4 Nelson, drilling 500 feet; Allison & Dingee's No. 7 Nelson, 31-13-10, drilling 2550 feet; J. W. Atkins' No. 1 DeMoss, 34-13-11, mudding off gas 2500 feet; Avery et al's No. 1 Johnson, 17-12-10, derrick.

Bayou Pierre Oil & Prod. Co.'s No. 1 State Land, 23-12-11, derrick down; Breckenstein et al's No. 1 Chaffraix, 30-12-10, shut down 2615 feet; Belchile & Laskey's Nos. 1, 2 and 3 T. & P., 8-12-10, locations; 5 T. & P., 5-12-10, drilling 1210 feet; 7 T. & P., 31-13-10, arranging to pump, 2775 feet; 9 T. & P., drilling 1550 feet; 10 T. & P., set 6-inch 2540 feet; 11 T. & P., 5-12-10, drilling 1900 feet; Bull Bayou Mystic Oil Co.'s No. 1 Sample, 2-14-11, location; Bull Bayou Oil Co.'s No. 9 Armistead, 24-12-11, location; 14 Armistead, derrick; 15 Armistead, 23-12-11, arranging to pump, 2436 feet.

Godfrey Cabot et al's No. 1 Westdale Plantation, 36-14-11, standard 900 feet salt water in hole, 2570 feet; Caddo Central Oil & Ref. Co.'s No. 5 Nelson, 6-12-10, set liner 2790 feet; 6 Nelson, rigging to drill; 4 Pugh, 13-12-11, drilling; 5 Pugh, derrick; 6 Pugh, location; Commodore Oil Co.'s No. 1 DeMoss, 34-13-11, drilling 2650 feet; Central Coast Oil Co.'s No. 1 Nelson, 6-12-10, set liner 2790 feet; Collosus Pet. Co.'s No. 1 Nelson, 31-13-10, tested oil and salt water, setting packer, 2840 feet; Continental Asphalt & Pet. Co.'s No. 1 Ardis, 1-12-11, derrick; 1 Nelson, 32-13-10, rig moved; 2 Nelson, location; 41 Nelson, fishing 2800 feet; 43 Nelson, drilling 300 feet; 44 Nelson, drilling 1200 feet; 45 and 46 Nelson, locations; A-3 Robinson, 36-13-11, set 6-inch 2670 feet; A-4 Robinson, location; A-5 Robinson, set 6-inch 2670 feet; A-6 Robinson, derrick; A-7 Robinson, drilling 1500 feet; B-5 Robinson, 32-13-10, drilling; B-6 Robinson, drilling 2150 feet; B-8 Robinson, set 6-inch 2550 feet; B-10 Robinson, drilling 2050 feet; B-12 Robinson, drilling 2320 feet; B-13 Robinson, derrick; B-14, B-15 and B-16 Robinson, locations; F-2 Robinson, bailed 6-inch, 2500 feet; F-3 Robinson, drilling 1700 feet; F-4 Robinson, derrick; F-5 Robinson, rigging to drill; 2 Polley, 7-12-10, drilling 2650 feet; 5 Polley, arranging to pump 2730 feet; 7 Polley, fishing 2740 feet; 8, 9 and 10 and 11 Polley, derrick; 12 Polley, drilling 1800 feet.

Doan Oil Co.'s No. 4 Nelson, 6-12-10, set 6-inch 2535 feet; 9 Nelson, set 6-inch 2545 feet; 10 Nelson, drilling 2550 feet; 11 Nelson, set 6-inch 2535 feet; Dominion Oil Co.'s Nos. 4 and 5 Nelson, 6-12-10, locations; 6 Nelson, set 6-inch 2535 feet.

Emerald Oil Co.'s No. 1 Carroll, 33-13-10, drilling 2890 feet; 2 Carroll, drilling 2750 feet; Emerson & Noble's No. 1 Hollingsworth, 8-12-10; Empire Gas & Fuel Co.'s No. 1 Howard, 27-13-10, rigging to drill.

Fair Oil Co.'s No. 1 Armistead, 20-13-10, bailing 2550 feet; Fortuna Oil Co.'s No. 4 Pugh-Polley, 7-12-10, location; 6 Pugh-Polley, 7-12-10, setting 6-inch 2550 feet; 6 Pugh, 13-12-11, location; 8 Pugh, 7-12-10, location; 24 and 25 Pugh, 6-12-10, locations; 26 Pugh, 6-12-10, arranging to pump, 2785 feet; 28 Pugh, 12-12-11, derrick; 31 Pugh, 12-12-11, arranging to pump, 2782 feet; 32 Pugh, 12-12-11, drilling 2700 feet; 33 Pugh, 12-12-11, bailing 2700 feet; 34 Pugh, 6-12-10, setting 6-inch 2595 feet; 35 Pugh, 6-12-10, drilling 1792 feet; 36 Pugh, 6-12-10, drilling 2054 feet; 37 Pugh, 12-12-11, drilling 1725 feet; 38 Pugh, 6-12-10, drilling 1042 feet; 39 Pugh, 6-12-10, derrick; Frederick Oil Co.'s No. 1 Wilkinson, 3-12-10, derrick.

Garirson Coal & Oil Co.'s No. 1 O'Neal, 2-12-11, drilling 2796 feet; Gilliland Oil Co.'s No. 2 Nelson, 6-12-10, drilling 2732 feet; 3 Nelson, arranging to pump, 2795 feet; 8 Nelson, derrick; A-2 Nelson, 32-13-10, set 6-inch 2511 feet; A-3 Nelson, derrick; A-4 Nelson, drilling 1153 feet; A-5 Nelson, set 6-inch 2487 feet; A-6 Nelson, drilling 1832 feet; A-7 and A-8 Nelson, derrick; 11 Pugh, 13-12-11, derrick down; 12 Pugh, derrick down; 14 Pugh, setting 4½-inch to cut off salt water, 2762 feet; Gulf Refining Co.'s No. 15 Christopher, 16-13-10, drilling 1893 feet; 6 Gray & Hook, 5-12-10, fishing 2783 feet; 7 Gray & Hook, drilling 2800 feet; 9 Gray & Hook, arranging to pump 2787 feet; 10 Gray & Hook, drilling 2115 feet; 11 Gray & Hook, derrick; 12 Gray & Hook, drilling 1355 feet; 13 Gray & Hook, derrick; 22 Jenkins, 11-12-11, drilling 2475 feet; 25 Jenkins, set 6-inch 2433 feet; 31 Robinson, 36-13-11, drilling 2615 feet; 5 Stephens, 13-12-11, drilling deeper, 2787 feet; 6 Stephens, drilling 1970 feet.

Heard Oil & Gas Co.'s No. 1 Jackson, 28-13-10, drilling deeper, 2787 feet; Homer 23 Oil Co.'s No. 1 Holley, 9-11-9, derrick; 1 Vascoca, 12-11-9, shut down.

Kansas Gulf Oil Co.'s No. 2 Nelson, 31-13-10, drilling 1800 feet; 3 Nelson, drilling 2735 feet; 4 Nelson, fishing 2550 feet.

Keen & Woolf Oil Co.'s Nos. A-1 and A-2 Nelson, 31-13-10, locations; A-3 Nelson, arranging to pump, 2830 feet; A-4, A-5, A-6 and A-7 Nelson, 31-13-10, locations.

Maurer & Dugan's No. 1 Johnson, 17-12-10, arranging to pump, 2743 feet; 2 Johnson, rigging to drill; Moorefield et al's No. 1 Hollingsworth, 8-12-10, arranging to pump, 2760 feet; 1 Nelson, 31-13-10, fishing 2815 feet; 2, 3 and 4 Nelson, locations.

R. A. Nelson's Nos. 2, 3, 5 and 6 Carroll, 31-13-10, locations; 4 Carroll, derrick; J. Malcolm Nelson Oil Co.'s No. 1 Carroll, 31-13-10, location.

Pritchard et al's No. 3 Ardis, 1-12-11, arranging to pump, 2827 feet; 4 Ardis, drilling 1975 feet; 5 and 6 Ardis, derricks; 7 Ardis, location; Prudential Oil Co.'s No. 1 Globe Lumber Co., 2-13-9, shut down 3500 feet.

Ramsey et al's No. 1 Robinson, 2-12-11, drilling deeper, 2797 feet; Red River Coushatta Oil Co.'s No. 1 Pylant, 32-13-9, location; Rolux Oil Co.'s No. 1 Marine, 29-12-10, shut down 2900 feet.

Shaffer Oil & Ref. Co.'s No. 6 Ardis, 1-12-11, arranging to pump, 2800 feet; 8 Ardis, drilling 100 feet; 6 Robinson, 8-12-10, shut down 400 feet; 10 Robinson, shut down 235 feet; Sinclair Oil Co.'s No. 1 Bidenhorn, 4-12-10, drilling 2770 feet; 2 and 3 Clarkson, 17-12-10, locations; A-7 Nelson, 8-12-10, rigging to drill; A-8 and A-11 Nelson, locations; A-9 Nelson, derrick; B-2 Nelson, 31-13-10, drilling 1825 feet; B-3 Nelson, setting 8-inch 1175 feet; B-4 Nelson, drilling 1895 feet; C-1 Nelson, derrick; C-2 Nelson, drilling 2385 feet; 6 Polley, 7-12-10, derrick down; 9 Polley, drilling 2975 feet; Sinclair & McCann's No. 1 Lindsey, 19-12-10, fishing 2987 feet; Standard Oil Co.'s No. 33 Palmer, 16-13-10, drilling 875 feet; 34 Palmer, location; 1 Robinson, 31-13-10, rigging to drill; Strange Oil & Ref. Co.'s No. 2 Boylston, 8-12-10, drilling through liner, 2780 feet; 1 Chaffraix, 30-12-10, derrick; 8 Nelson, 8-12-10, bailing 2775 feet; 9 Nelson, shut down 1000 feet; 10 Nelson, drilling 1450 feet; 12 Nelson, derrick down; 13 Nelson, derrick; Sun Co.'s No. 5 Nelson, 6-12-10, drilling 1875 feet; 7 Nelson, drilling 2573 feet; 8 Nelson, rigging to drill.

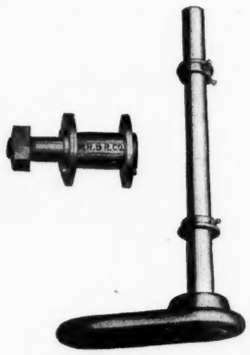
Tarver Oil Co.'s No. 1 O'Neal, 2-12-11, derrick; The Texas Co.'s No. 35 Brinkerhoff, 31-13-10, location; 5 Stephens, 13-12-11, location; 7 Wilkinson, 11-12-11, derrick; Texas Ranger Oil Co.'s No. 2 Robinson, 32-13-10, derrick; 3 and 4 Robinson, rigging up; Transcontinental Oil & Gas Co.'s No. 1 Clarkson, 17-12-10.

United States Drilling Corp.'s No. 1 Fletcher, 4-12-10, drilling out plug 2550 feet.

Woodley et al's No. 1 Lockett, 29-13-10, arranging to pump 2820 feet; 2 Lockett, drilling 955 feet; 3 Lockett, drilling 200 feet; 4 Lockett, location; 1 Smith, 19-12-10, derrick down; 2 Armistead, 29-13-10, location.

INJUNCTION BY COURT AGAINST INSPECTION AND FEES REFUSED

An injunction restraining the State of Georgia from inspecting petroleum products and collecting fees for such inspection was refused The Texas Company by the Federal District Court at Atlanta during the week. It was held that such inspection could not be applied to oil or gasoline consigned to a Georgia consumer and delivered in the original package, but that the state could inspect that shipped for indefinite storage or sold to consumer in other than the original package.



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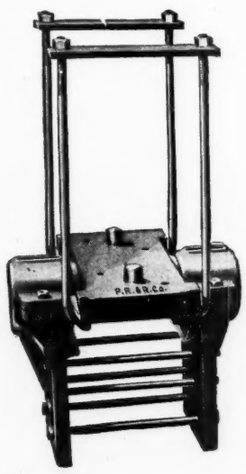

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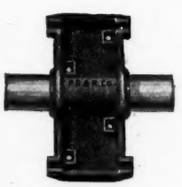

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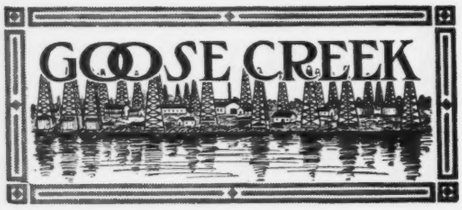


GOOSE CREEK PRODUCTION

The average daily production of the Goose Creek field for the past week was distributed approximately as follows:

	Barrels
Gulf Production Company	5,100
Humble Oil & Refining Company	4,210
Gulf Coast-Crown	2,200
E. F. Simms & Company	2,400
The Sun Company	625
Bryan Oil Company	75
Turnbow Oil Corporation	190
Imperial Pet.	35
Crown Oil & Refining Company	75
F. B. West	60
Goose Creek Oil Corporation	55
The Texas Company	50
O'Neil Oil Company	10
Total	15,085
Last week	17,115

GOOSE CREEK COMPLETIONS

Gulf Production Co.'s No. 2 Hoffman Gaillard-A is pumping 250 barrels at 2800 feet.

Sun Co.'s No. 6 Wright is pumping 80 barrels at 2750 feet.

E. F. Simms & Co.'s No. 22 Schilling is pumping 40 barrels at 3345 feet.

Humble Oil & Ref. Co.'s No. 20 Gaillard Peninsula has been abandoned at 2547 feet.

GOOSE CREEK DRILLING REPORT

Gulf Production Co.'s No. 21 Beaumont is preparing to pump at 2180 feet; 23 Beaumont is drilling around 220 feet; 23 Stateland is drilling around 2000 feet; 24 Stateland is drilling around 2250 feet; 26 Stateland is drilling around 1500 feet; 4 Rosenthal is drilling around 3150 feet; 11 C. Gaillard-A is drilling around 1250 feet; 11 Busch is arranging to pump at 3430 feet; 13 Busch is fishing at 3290 feet; 14 Busch is a derrick; 16 Hoffman Gaillard is drilling around 2100 feet; 17 Hoffman Gaillard is a location; 18 Hoffman Gaillard is drilling around 2100 feet; 19 Hoffman Gaillard is rigging up.

Humble Oil & Ref. Co.'s No. 3 Jones Stateland is bailing at 3364 feet; 21 Gaillard Peninsula is arranging to pump at 2230 feet; 22 Gaillard Peninsula is rigging up; 41 Gaillard 25 Acres is testing on air at 3390 feet; 42 Gaillard 25 Acres is rigging up; 9 Tabb is bailing at 3090 feet; 8 Beaumont is sidetracking at 1900 feet; 8 Gaillard 5 Acres is drilling around 800 feet.

Gulf Coast Oil Corp. and Crown Oil & Ref. Co.'s No. 28 Gaillard is trying to plug off salt water at 3385 feet; 29 Gaillard is drilling in at 3340 feet; 30 Gaillard is rigging up.

The Texas Co.'s No. 12 Isenhour is bailing at 2300 feet; 17 Isenhour is a location.

E. F. Simms & Co.'s No. 19 Sweet is drilling around 2125 feet; 20 Sweet is drilling around 2250 feet; 24 Schilling sanded up when placed on the pump at 3360 feet; 25 Schilling is drilling around 2150 feet; 29 Smith set six-inch at 2760 feet; 33 Smith is standing at 3410 feet; 38 Smith is preparing to pump at 2200 feet; 39 Smith set 6-inch at 2360 feet; 40 Smith is rigging up; 3 Duke is drilling around 2000 feet.

Oil and Gas Co.'s No. 1 Fitzgerald is drilling around 2350 feet.

F. L. Spangler et al's No. 1 Spillman Island is down around 3280 feet.

Allison-Hugo Synd.'s No. 1 Atkinson Island is repairing rig at 3720 feet.

Allen & Walker's No. 1 Smith is standing at 2650 feet.

Sun Co.'s No. 4 Bartlett Smith is rigging up; 6 Bartlett Smith is drilling around 2100 feet.

O'Neil Oil Co.'s No. 2 Wright is a derrick.

Bryan Oil Co.'s (formerly Onondaga) No. 5 Wright is standing at 2560 feet.

Powell Oil Co.'s No. 1 Scorrega is drilling around 2835 feet; 1 Jones is drilling around 2840 feet.

West et al's No. 4 Wright is arranging to pump at 2594 feet.

Tex-Washington Oil Co.'s No. 1 Bryan is drilling deeper at 3345 feet.

Majestic Oil Co.'s No. 5 Dolan is drilling around 2610 feet.

SARATOGA PRODUCTION

The average daily production of the Saratoga field for the past week was approximately 1800 barrels.

SARATOGA COMPLETIONS

The Weldon Oil Co.'s No. 8 Hooks is pumping 100 barrels at 900 feet.

SARATOGA DRILLING REPORT

The Gulf Production Co.'s No. 18 Tabb is rigging up.

The Texas-Empire's No. 1 Nancy Fuller is drilling around 3290 feet.

Rio Bravo Oil Co.'s No. B-213 is drilling around 1400 feet.

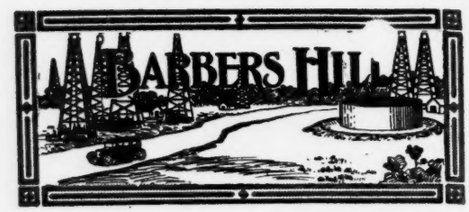
Cotton Oil Co.'s No. 1 Ogden is testing at 1300 feet.

The Sun Co.'s No. 142 McShane is drilling around 3410 feet; No. 149 Brice is drilling around 950 feet; No. 150 G. C. and S. F. is drilling around 800 feet.

Regina Oil Co.'s No. 13 Cotton has set six inch at 1100 feet.

San Bernard Oil Co.'s No. 3 Hooks is drilling around 800 feet.

Weldon Oil Co.'s No. 9 Hooks is rigging up.



BARBERS HILL PRODUCTION

The average daily production of the Barbers Hill field for the past week was approximately 380 barrels.

BLOWOUT AT BARBERS HILL

The Texas Company's No. 1 E. Barrow at Barbers Hill blew out Sunday at a little below 3200 feet and gassed for more than an hour, making salt water, black fluid and some oil. Heretofore blowouts have occurred at shallow depths in the various wells drilled in this section and have occurred all the way from 400 to around 2000 feet. Operators claim that the blowout last Sunday indicates the existence of deep oil in this field. The pipe parted and a fishing job is the result. The Texas Co. has abandoned its No. 1 F. Barrow and No. 3 B. Fisher, which were down around 500 feet and 1190 feet, respectively.

BARBERS HILL COMPLETIONS

Walter Keeble's (trustee) No. 3 Gulf Production Co. is pumping 35 barrels of .1720 gravity oil.

BARBERS HILL DRILLING REPORT

Walter Keeble's (trustee) No. 4 Gulf Production Co. is rigging up.

United Petroleum Co.'s No. 1 Richardson is standing at 1600 feet; 4 Richardson is drilling around 1220 feet.

Gulf Coast Oil Corp. and Crown Oil & Ref. Co.'s No. 1 Barber is rigging up.

Kavanaugh Petroleum Co.'s No. 1 B. Fisher is rigged up waiting on orders.

Spurrier Development Co.'s No. 2 Barber is drilling around 400 feet.

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HULL PRODUCTION

	Barrels
Gulf Production Company	8,000
Republic Production Company	2,000
Monarch Oil & Refining Company	800
The Sun Company	650
The Texas Company	550
Humbie Oil & Refining Company	400
Higgins Oil & Fuel Company	300
Thais, Wilkerson & Parker	125
Empire Gas & Fuel Company	75
Crown Oil & Refining Company	45
Total	12,945
Last week	9,195

4000 BARREL WELL AT HULL

The Gulf-Texas Co.'s No. 4 Morris Phillips at Hull was completed Friday morning at 2550 feet with an initial flow of approximately 4000 barrels of pipe line oil, at which rate it continued to flow early this week.

HULL DRILLING REPORT

Monarch Oil & Ref. Co.'s No. 5 Hankamer-Peveto is drilling around 1250 feet; 6 Hankamer-Peveto is drilling around 1600 feet; 7 and 8 Hankamer-Peveto are locations.

Humble Oil & Ref. Co.'s No. 3 Palmer is sidetracking at 600 feet; 4 Palmer is reaming at 2200 feet; 6 Palmer is drilling around 2000 feet; 8 Hankamer is drilling around 1400 feet.

Gulf Production Co.'s No. 9 Phoenix is milling at 1800 feet; 13 Phoenix is fishing at 2300 feet; 14 Phoenix is drilling around 2000 feet; 15 Phoenix is rigging up; 16 Phoenix is drilling around 800 feet; 17 Phoenix is drilling around 300 feet; 2 and 4 Baldwin are derricks; 8 Baldwin is drilling around 950 feet; 4 Scarborough is drilling around 1000 feet; 4 Thomas Fee is drilling around 2400 feet.

Gulf-Texas Co.'s No. 9 Morris Phillips is drilling around 2425 feet; 10 Morris Phillips is a derrick; 11 Morris Phillips is a location.

The Texas Co.'s No. 2 Cantor is arranging to pump at 2148 feet; 4 Cantor is arranging to pump at 2128 feet; 5 Cantor is rigging up; 4 Palmer is a derrick; 5 Palmer is drilling around 1100 feet; 2 Day Cantor is a location; 4 Cantor is a derrick; 5 Day Cantor is drilling around 2200 feet.

Republic Production Co.'s No. 32 Dolbear is sidetracking around 1200 feet; 33 Dolbear is drilling around 2450 feet; 34 Dolbear is down around 1400 feet; 35 Dolbear is a location.

Crown Oil & Ref. Co.'s No. 2 Palmer has set 8-inch at 2516 feet; 3 Hankamer, which tested salt water at 890 feet, is drilling deeper.

Empire Gas & Fuel Co.'s No. 3 Barngrover had a fishing job early in the week around 2770 feet; 4 Barngrover is a derrick; 5 Barngrover is a location; 1 Barrow is a derrick.

The Sun Co.'s No. 7 Carr is drilling around 1000 feet; 8 Carr had a fishing job Monday at 800 feet; 1 Carr Homestead is drilling around 2950 feet.

Higgins Oil & Fuel Co.'s No. 6 Smith is preparing to pump at 2065 feet; 1 Republic 5 Acres is rigging up.

Thais, Wilkerson & Parker's No. 2 Carr is preparing to pump at 2100 feet; 3 Carr is rigging up.

Eagle Point Oil Co.'s No. 2 Devore is a location.

Yount-Lee Oil Co.'s Nos. 3 and 4 Eight Acre tract are derricks; 5 is a location; 2 Ford One Acre is drilling around 1900 feet; 3 Ford One Acre is a location.

BLUE RIDGE PRODUCTION

The average daily production of the Blue Ridge field for the past week was approximately 200 barrels.

GULF WELL IMPROVES

The Gulf Production Co.'s No. 2 Bassett Blakeley at Blue Ridge, has increased its production to around 150 barrels a day. Early in the week it was flowing by heads every three minutes. It was making no water. The Gulf has made a location and is rigging up for No. 3 Bassett Blakeley-C located approximately half way betwen No. 1 and No. 2 Bassett Blakeley.

WEST WELL PUMPING 50 BARRELS

The West Production Co.'s No. 2 Luscher at Blue Ridge, which after deepening to around 2600 feet, was placed on the pump and had an initial production of 160 barrels. It later dropped to around 50 barrels.

BLUE RIDGE DRILLING REPORT

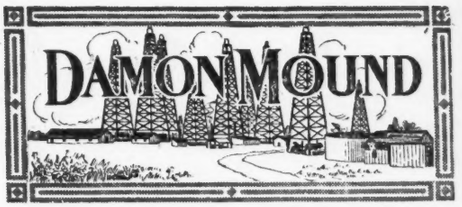
The Republic Production Co.'s No. 5 West is drilling around 500 feet.

Sinclair Gulf's No. 1 Davidson is drilling around 3210 feet.

Atlantic Oil Producing Co. and H. H. Myer's No. 1 Luscher is drilling around 3620 feet.

The Texas Co.'s No. 1 Robinson is drilling around 2500 feet; No. 1 Lafferty which was rigging up has been temporarily abandoned.

West Production Co.'s No. 1 Knight is drilling around 525 feet; No. 1 Luscher 200 Acres is drilling around 850 feet.



DAMON MOUND PRODUCTION

The average daily production of the Damon Mound field for the past week was approximately 3050 barrels.

DAMON MOUND DRILLING REPORT

The Sinclair Gulf Oil Co.'s No. 16 Bryan is drilling around 2170 feet; No. 17 Bryan is drilling around 2230 feet; No. 4 Becker is drilling around 1580 feet; No. 5 Thomas Fee is drilling around 3015 feet; No. 9 Masterson is waiting on cemented casing to set at 1306 feet; No. 1 Duncan is drilling around 980 feet.

The Humble Oil and Refining Co.'s No. 1 Osgood Mock is drilling around 1720 feet; No. 2 Gallagher is drilling around 2400 feet.

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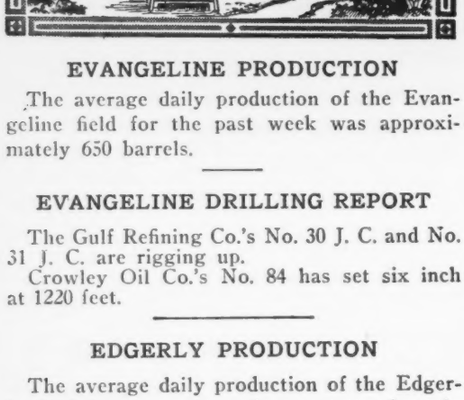


EVANGELINE PRODUCTION

The average daily production of the Evangeline field for the past week was approximately 650 barrels.

EVANGELINE DRILLING REPORT

The Gulf Refining Co.'s No. 30 J. C. and No. 31 J. C. are rigging up.

Crowley Oil Co.'s No. 84 has set six inch at 1220 feet.

EDGERLY PRODUCTION

The average daily production of the Edgerly field for the past week was approximately 1200 barrels.

EDGERLY COMPLETIONS

Gulf Refining Co.'s No. 8 Higgins-A has been abandoned at 3700 feet.

Gulf Refining Co.'s No. 5 W. C. Moore is pumping 75 barrels at 2700 feet.

Victory Oil Co.'s No. 13 Lillard is pumping 10 barrels at 2280 feet.

EDGERLY DRILLING REPORT

The Gulf Refining Co.'s No. 4 W. C. Moore is rigging up; No. 29 Bright Penn is rigging up to work over; No. 33 Bright Penn is drilling around 2100 feet.

Edgerly O. & M. Co.'s No. 3 Wilson is drilling around 2070 feet.

Emerson et al's No. 1 Hunter is standing.

Highmount Development Co.'s No. 1 Perry is fishing.

VINTON PRODUCTION

The average daily production of the Vinton field for the past week was approximately 3000 barrels.

VINTON COMPLETIONS

The Gulf Refining Co.'s No. 12 Vincent is pumping 150 barrels at 2250 feet.

The Vinton Petroleum Co.'s No. 10 Gray has been abandoned and No. 25 Gray has also been abandoned.

VINTON DRILLING REPORT

Gulf Refining Co.'s No. 20 G. N. G. is arranging to pump at 2400 feet; No. 52 G. N. G. is drilling around 1700 feet; No. 20 Star Vincent has been temporarily abandoned at 2300 feet.

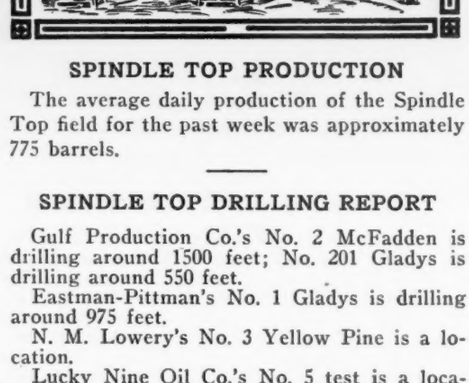
Rescue Oil Co.'s No. 7 Gray is arranging to pump at 2280 feet.

Gum Cove Oil Co.'s No. 6 Lucky Four Acres is standing at 2645 feet; No. 3 Green is milling at 1875 feet.

Mars McLeans' No. 1 Gray is standing; No. 4 Gray is fishing; No. 5 Gray is a derrick; No. 2 Lizzo is standing.

The Texas Co.'s No. 4 Gray is arranging to pump.

Vinton Petroleum Co.'s No. 29 Gray is drilling around 1000 feet.



SPINDLE TOP PRODUCTION

The average daily production of the Spindle Top field for the past week was approximately 775 barrels.

SPINDLE TOP DRILLING REPORT

Gulf Production Co.'s No. 2 McFadden is drilling around 1500 feet; No. 201 Gladys is drilling around 550 feet.

Eastman-Pittman's No. 1 Gladys is drilling around 975 feet.

N. M. Lowery's No. 3 Yellow Pine is a location.

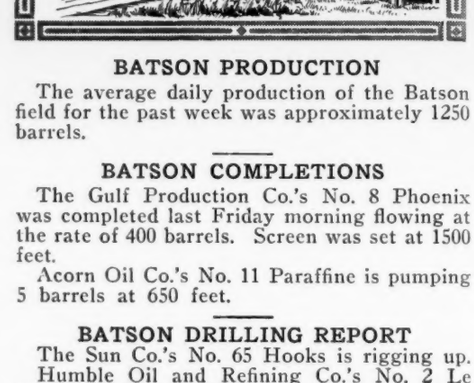
Lucky Nine Oil Co.'s No. 5 test is a location.

Wilson and Broach's No. 42 Higgins is drilling around 720 feet.

Unity Oil Co.'s No. 8 Gladys-D is drilling around 600 feet.

KLEBERG COMPANY HELD MEETING

Stockholders and directors of the Kleberg County Oil & Gas Company held the annual meeting at Kingsville last week and re-elected the old officers. Charles H. Flato, Jr. is president of the company and he reported the completion of one 10,000,000 gasser near Kingsville and the drilling of the No. 2 well. It was the sense of the meeting that the No. 2 well should continue to a greater depth, having already drilled to a depth below 3600 feet. An oil sand worth about 20 barrels a day was passed up at 3010 feet. It was found the organization expense of the company had been but 3.3 per cent.



BATSON PRODUCTION

The average daily production of the Batson field for the past week was approximately 1250 barrels.

BATSON COMPLETIONS

The Gulf Production Co.'s No. 8 Phoenix was completed last Friday morning flowing at the rate of 400 barrels. Screen was set at 1500 feet.

Acorn Oil Co.'s No. 11 Paraffine is pumping 5 barrels at 650 feet.

BATSON DRILLING REPORT

The Sun Co.'s No. 65 Hooks is rigging up.

Humble Oil and Refining Co.'s No. 2 Le Garza is sidetracking around 2400 feet.

Eagle Petroleum Co.'s No. 1 Vickers is drilling around 525 feet; No. 1 Matteson is drilling around 200 feet.

Paraffine Oil Co.'s No. 1 Fee is a derrick.

Ada Bell Oil Co.'s No. 8 Paraffine is rigging up.

MARKHAM PRODUCTION

The average daily production of the Markham field for the past week was approximately 200 barrels.

MARKHAM DRILLING REPORT

Monarch Oil and Refining Co.'s No. 1 Hardy is drilling around 2800 feet.

Markham Production Co.'s No. 1 Hawk is drilling around 2900 feet.

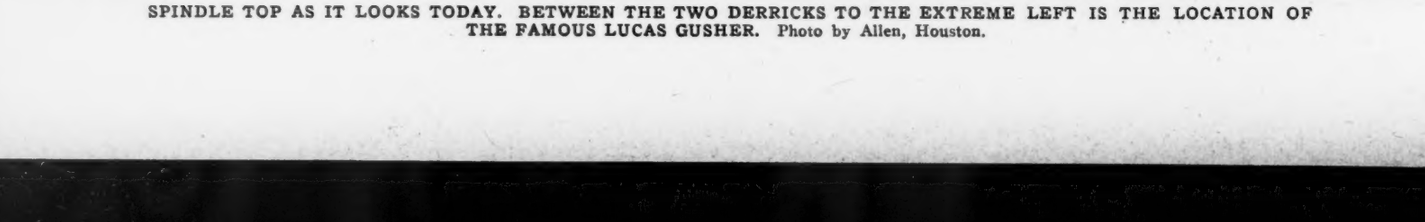
CORSICANA OIL NEWS

The deep test of the Cor-Tex Oil Company south of the Corsicana City limits is drilling with a cable rig below 2600 feet. The contract depth is 4500 feet.

Graves Brothers, contractors, are completing a shallow well for the Terrell Production Company on its lease in the Angus field. The well is making a good showing of oil but has not been tested yet. This was the first of three wells that is to be drilled by this company on their lease.

The deep test of the Oklahoma Petroleum and Gasoline Company is down over 500 feet. This well is being drilled near Richland, south of Corsicana, and the company has made location for another test near the one now being drilled.

Graves Brothers are drilling a well on the Walton lease North of Corsicana with a cable rig. The well was started with a ten-inch hole and unless an unusually good shallow well is found at the 700 foot level the well will be drilled to the 1400 foot level at which depth the deep test of the Cor-Tex made a good showing of oil and gas.



SPINDLE TOP AS IT LOOKS TODAY. BETWEEN THE TWO DERRICKS TO THE EXTREME LEFT IS THE LOCATION OF THE FAMOUS LUCAS GUSHER. Photo by Allen, Houston.

WEST COLUMBIA PRODUCTION

The average daily production of the West Columbia field for the past week was distributed approximately as follows:

	Barrels
The Humble Oil & Refining Company	12,000
The Texas Company	4,500
The Gulf Production Company	1,100
Crown Oil & Refining Company	550
The Sun Company	425
Total	18,575
Last week	16,125

WEST COLUMBIA COMPLETIONS

The Texas Co.'s No. 37 Hogg is flowing 500 barrels by heads at 3000 feet.

The Texas Co.'s No. 38 Hogg is flowing 300 barrels on air at 3284 feet.

Peoples Oil & Gas Co.'s No. 1 Bartlett has been abandoned at 2865 feet.

The Sun Co.'s No. 1 McGregor after being placed on the pump went to salt water at 3187 feet.

Crown Oil & Refining Company's No. 4 Marmion is pumping 100 barrels at 2600 feet.

WEST COLUMBIA DRILLING REPORT

Gulf Production Co.'s No. 8 Ayers is perforating at 3200 feet; No. 4 Hogg is a derrick; No. 6 Hogg is drilling around 3300 feet; No. 7 Hogg is bailing at 3050 feet; No. 2 around Underwood Fee is drilling around 2900 feet; No. 1 W. C. Hogg is drilling around 2900 feet; No. 2 W. C. Hogg is drilling around 2100 feet; No. 3 Masterson is perforating at 3000 feet; No. 3 McMeans is drilling around 3010 feet; No. 4 McMeans is rigging up.

Humble Oil & Refining Co.'s No. 6 Bashara has set 6 inch at 3065 feet; No. 7 Bashara is drilling around 2800 feet; No. 8 Bashara is drilling around 2100 feet; No. 6 Coons is drilling around 1970 feet; No. 24 Japhet is bailing at 3230 feet; No. 25 Japhet is drilling around 3220 feet; No. 26 Japhet is drilling around 2740 feet; No. 27 Japhet is drilling around 1800 feet.

The Texas Co.'s No. 14 Hogg is a location; Nos. 20 and 23 Hogg are locations; No. 32 Hogg is standing at 3365 feet; No. 35 Hogg is drilling around 3000 feet; No. 36 Hogg is a derrick; No. 39 Hogg is drilling around 3200 feet; No. 40 Hogg is down around 2770 feet; No. 42 Hogg is a location; No. 44 Hogg is drilling around 2410 feet; No. 45 Hogg is drilling around 3000 feet; No. 46 Hogg is sidetracking at 1800 feet; No. 47 Hogg is rigging up; No. 48 Hogg is a location; Nos. 4, 7 and 10 Arnold are locations; No. 14 Arnold is rigging up; No. 20 Arnold is drilling around 1600 feet; No. 1 Abrams, which tested salt water is pulling screen to deepen at 2618 feet.

Southern Petroleum Co.'s No. 2 Humble Sour Lake is drilling around 3375 feet.

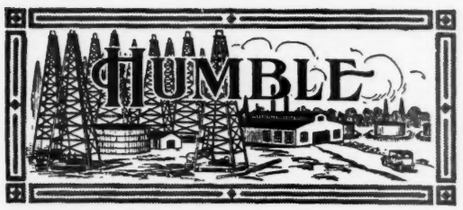
Great Belt Oil Co.'s No. 3 Hogg is a location; No. 4 Hogg is drilling around 2110 feet.

Dunlap-Delaney's No. 1 Boyles is testing on air at 3315 feet.

Crown Oil and Refining Co.'s No. 1 Marmion is sidetracking at 2300 feet.

Sun Co.'s No. 6 Robinson is drilling around 3640 feet; No. 7 Robinson is a derrick.

Werean Oil Co.'s No. 1 McFarland is standing at 3120 feet.



HUMBLE PRODUCTION

The average daily production for Humble field for the past week was distributed approximately as follows:

	Barrels
The Texas Company	4000
Galena-Signal Oil Company	840
Invincible Oil Company	500
Gulf Coast Oil Corporation	300
Southern Petroleum Company	275
West Production Company	160
The Sun Company	135
Humble Oil & Refining Company	120
Gulf Production Company	90
Crown Oil & Refining Company	85
Houston Production Company	40
Castell Oil Company	40
Miscellaneous	300
Total	6885
Last week	7210

HUMBLE PIPE LINE RUNS

The average daily pipe line runs of the Humble field for the week just past were as follows:

	Barrels
The Texas Company	4,000
Galena-Signal Oil Company	900
The Sun Company	650
Gulf Production Company	200
Total	5750

HUMBLE COMPLETIONS

The Texas Co.'s No. 244 Landslide is flowing 200 barrels at 2500 feet.

The Gulf Coast Oil Co.'s No. 25 Hermann is pumping 50 barrels at 1200 feet.

Stribling & Co.'s No. 1 Gulf Eight Acres is flowing 100 barrels at 2714 feet.

Southern Petroleum Co.'s No. 39 Hermann is pumping 50 barrels at 1500 feet.

Gulf Coast Development Co.'s No. 7 Humble Sour Lake tested dry at 1500 feet and is drilling deeper.

The Texas Oil Producers No. 1 Fisk was a dry hole at 2225 feet, and has been abandoned.

The Texas Co.'s No. 13 Burt 100 acres has been abandoned 2650 feet.

The Humble Oil & Refining Co.'s No. 7 Mason is pumping 8 barrels at 907 feet.

HUMBLE DRILLING REPORT

Atlantic Oil Producing Co.'s No. 1 Hamlin is drilling around 3200 feet.

Gulf Coast Oil Corp.'s No. 23 Fee is rigging up.

Houston Production Co.'s No. 3 Satsuma is drilling in at 1180 feet; No. 4 Satsuma is a location.

Sun Co.'s No. 24 River is drilling around 2780 feet.

Southern Petroleum Co.'s No. 40 Hermann is rigging up.

Indemnity Oil Co.'s No. 1 Westheimer is drilling around 1120 feet.

E. F. Simms and Co.'s No. 1 Hamlin is drilling around 1000 feet.

Grant Oil and Gas Co.'s No. 2 Weed is drilling around 1350 feet.

The Texas Co.'s No. 246 Landslide is drilling around 1900 feet; No. 31 Koehler is fishing at 2911 feet; No. 18 House is drilling at 2850 feet.

SOUR LAKE PRODUCTION

The average daily production of the Sour Lake field for the past week was distributed approximately as follows:

	Barrels
The Texas Company	2100
Gulf Production Company	1300
Yount-Lee Oil Company	460
Humble Oil & Refining Company	480
Lake Oil Company	365
Thais Oil Company	140
Minor Oil Company	100
Farish & Ireland	65
Gilbert Oil Company	85
The Sun Company	75
Primrose Oil Company	65
Lake Graham Oil Company	60
Miscellaneous	250
Total	5545
Last week	5765

SOUR LAKE PIPE LINE RUNS

The average daily pipe line runs from the Sour Lake field for the week just past were approximately as follows:

	Barrels
The Texas Company	2100
Gulf Production Company	1800
The Sun Company	2600
Total	6500

SOUR LAKE COMPLETIONS

Gilbert Oil Co.'s No. 89 Fee is pumping 45 barrels at 830 feet.

SOUR LAKE DRILLING REPORT

The Gulf Production Co.'s No. 48 Hardin is perforating at 1400 feet.

Minor Oil Co.'s No. 40 Fee is bailing at 1120 feet.

Martin Oil Co.'s No. 2 Bordash is drilling around 950 feet.

United Oil and Fuel Co.'s No. 1 Crosby is sidetracking around 800 feet.

Fountain and Dismuke's No. 5 Rogers is bailing at 750 feet.

J. S. Jackson's (trustee) No. 8 Jackson is drilling around 600 feet.

Yount-Lee Oil Co.'s No. 1 Glass is drilling around 1200 feet.

The Texas Co.'s No. 214 Fee is drilling around 1300 feet; No. 302 Fee is bailing at 2808 feet.

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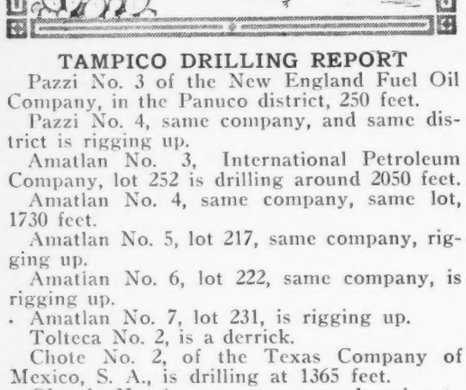

TAMPICO DRILLING REPORT

Pazzi No. 3 of the New England Fuel Oil Company, in the Panuco district, 250 feet.

Pazzi No. 4, same company, and same district is rigging up.

Amatlan No. 3, International Petroleum Company, lot 252 is drilling around 2050 feet.

Amatlan No. 4, same company, same lot, 1730 feet.

Amatlan No. 5, lot 217, same company, rigging up.

Amatlan No. 6, lot 222, same company, is rigging up.

Amatlan No. 7, lot 231, is rigging up.

Tolteca No. 2, is a derrick.

Chote No. 2, of the Texas Company of Mexico, S. A., is drilling at 1365 feet.

Obando No. 4, same company, changing to standard tools at 1780 feet.

San Martin No. 1, same company, 1800 feet.

Lot 138, Amatlan, rigging up.

Cicero No. 3, rigging up.

Well No. 1 lot 97, Chinampa, of the Transcontinental Petroleum Co. drilling around 2160 feet.

Well No. 1, lot 113, Chinampa, same company has cemented 10-inch at 1786 feet.

Well No. 3, lot 134 Chinampa, drilling at 1825 feet.

Well No. 4, lot 134, Chinampa, changing to standard rig at 1875 feet.

Lot 198 Amatlan, is a derrick.

Lot 149 Amatlan, is a location.

Well 114, of the East Coast Oil Company washing to bottom at 1940 feet.

(Continued on Page 73.)

Era of Wildcatting Under Way to Replenish Mexico's Oil Supply

A CAMPAIGN to replenish the supply of oil in Mexico is beginning to get into full swing. Six months ago, when Carranza's decree, enforced by squads of soldiers, stopped the drilling in the Southern republic, drilling in Mexico had dropped to an almost negligible point. Bandit raids, trouble with the Carranzista government, and a general tightness in oil field supplies all contributed toward this condition.

It was during this tightness that salt water affected some of the best producing fields, and consequently when Carranza lifted the ban, when oil field supplies became more available and a new government with a new attitude came into power, the long planned drilling campaign was started with vigor.

At the present time the Zacamixtle section, between Cerro Azul and Chinampa, is getting a strong play. A number of companies are drilling there and a large number of other companies have made locations. This section is closest to the producing wells at Los Naranjos.

In the Chantla section west of present production the Huasteca is drilling, while away to the northwest, in the Tomales district, it is not unlikely that considerable activity will start soon. It is reported that one company has a 2000 barrel well in this section, but the well was so small and the need for the oil by the company was not urgent, so no further wells have been started around it.

Between Victoria and Monterey, near the station of Cruz, in Tamulapis, leases covering 160,000 acres have been taken on what is believed to be a large dome, and four of the larger companies, including the Transcontinental and the Atlantic Lobos, are preparing to drill a joint test.

It is reported that a number of seepages have been discovered and that the first well will be located near one of these seepages.

In the Sta La Marina district the Corona has drilled six of seven deep tests near large seepages, but with no results. However, the large acreage which the company has under lease is still held by it, and it is expected that another test will be made.

The Marland interests have a party of geologists in Sonora, the party entering Mexico at Nogales some time back. The Marland interests have a large concession in Sonora and also one up the Panuco river in what might be termed the Panuco-Topila section. Marland is reported as forming a Mexican company with General Obregon on its board of directors.

Chihuahua is reported to have numerous oil seepages, and it is very likely that that state will get a strong play within the next year or two. Geological parties from a number of American companies are known to have been making surveys over various sections of Mexico, and the Tampico section will not be alone in this search for oil in Mexico.

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FUEL OIL

Mexican Oil Exports in May Broke All Previous Records

ALL previous exportation records of Mexican oil fields were broken during the month of May when oil companies operating in that territory exported 11,200,123.34 barrels of petroleum. The Huasteca Petroleum Company headed the exporters list with a shipment of 2,416,801.87 barrels. The former high record of 10,288,283.92, which was made in March, was beaten in May by nearly one million barrels. The April shipment was beaten by 1,107,810.38.

Besides the Huasteca Petroleum Company, the other companies which exported more than a million barrels of oil were: The Standard Oil Company, Cia. Metropolitana de Oleoductoc and Cia. Mexicana de Petroleo, "El Aguila," S. A.

The May oil exports were divided among the companies as follows:

	Barrels
Huasteca	2,416,801.87
Aguila	1,900,002.00
Standard	1,089,587.96
Metropolitan	1,038,411.90
Texas	837,898.73
Mexican Gulf	665,659.45
Freeport	595,546.42
East Coast	520,990.00
Penn Mex	378,354.46
Cortez	364,129.00
Cochrne & Harper	275,680.91
Pierce Navigation	237,529.00
Corona	270,188.58
Cias. del Agwi, S. A.	186,750.82
Tal Vez	95,420.55
National Oil	94,224.00
New England	70,478.00
National Petroleum	64,695.32
Terminal Union	59,774.37
Interocean	38,000.00
Total	11,200,123.34

TAMPICO DRILLING REPORT

(Continued from Page 72.)

Well No. 202, same company, set 8-inch at 1649 feet.

Pan American of La Perla Oil Company, drilling at 1880 feet.

Los Naranjos No. 11, of the Cia. Mexicana de Petroleo "El Aguila", S. A., is drilling at 2260 feet.

Los Naranjos No. 12, same company, 1700 feet.

Los Naranjos No. 13, same company, 1320 feet.

Los Naranjos No. 14, same company, 250 feet.

Zacamixtle No. 1, same company, rigging up.

Zacamixtle No. 2, same company, is rigging up.

Zacamixtle No. 3, same company, is a location.

Potrero No. 9, same company, drilling at 1620 feet.

Potrero No. 10, same company is drilling at 450 feet.

Moraiillo No. 1, same company is drilling at 250 feet.

Higueros No. 1 same company is drilling at 2800 feet.

Amatlan No. 1, on lot 146, of the Mexican Gulf Oil Company, is drilling at 1840 feet.

Amatlan No. 3, on lot 251 set 8-inch at 1725 feet.

Chinampa No. 3, on lot 99, same company, is standing.

Cardenas No. 1, on lot 95 is rigging up.

Zacamixtle No. 2, on lot 14 is a location.

Tolteca No. 1 Hacenda de Tolteca, rigging up.

Amatlan No. 4 on lot 251, same company, drilling at 800 feet.

Zuniga No. 4, Panuco district, same company is rigging up.

Cruz No. 1 Hacienda de Tamantao, same company, derrick built.

Cardenas No. 1, on lot 95, of the Continental Mexican Petroleum Company, rigging up.

Maza No. 1 of the National Petroleum Co. is drilling at 1300 feet.

Robles No. 5 of the Tampascos Oil Company, is rigging up.

Well No. 1, on lot 114, Chinampa, of the Empire Gas & Fuel Company, is drilling around 1040 feet.

Well No. 2, same company, is a location.

Tampuche No. 2, of the Kern Mex Oilfields, Ltd., is drilling at 550 feet.

La Palma No. 2, same company, drilling at 1425 feet.

Lot 64, Amatlan, of La Atlantica Company, is shut down.

Lot 111, Chinampa, same company, drilling at 750 feet.

Lot 141, Amatlan of the Cortez Oil Company, is drilling at 1925 feet.

Gonzales No. 3 of the Mexican Sinclair interests, set 12½ inch at 600 feet.

Gonzales No. 4, same company, waiting for cement to set at 940 feet.

Chinampa 114 same company, waiting for cement to set at 1709 feet.

Lot 127 Amatlan, 200 feet.

Zurita No. 5, of the Freeport & Mexican Fuel Oil Company, is drilling at 300 feet.

Bazanez No. 1 is rigging up.

Rivera No. 2, on Constancia Rivera lot, Tampuche, Panuco has resumed drilling.

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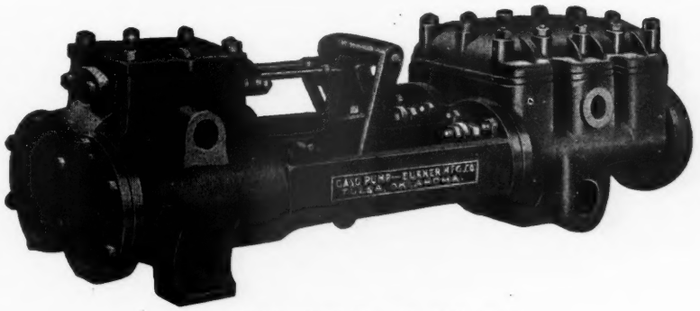

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SHOWING IN WILDCATS

The best showing of oil made by any of the far-out and distant wildcats in Orange county is that of the Olive Petroleum's well at Olive, some thirty miles south and east of the Richfield section. A good showing of oil was noticed at 2500 feet, and at the present depth of 2750 feet a better sand has been encountered warranting the setting of pipe for test. Prof. E. A. Starke, one of the most noted of California petroleum geologists, who reported on the property, predicts commercial oil possibilities at about 3200 feet.

TO BRING IN NO. 2

The new Brea Canyon field in Orange county, north of Fullerton, is about to have its second oil well. The General Petroleum is making preparations to bring in its Tonner No. 2. The oil sand was struck deeper than in No. 1, and with 60 feet of rich sand this well should produce not less than 500 barrels. Tonner No. 1, brought in almost four months ago, is making 450 barrels daily of 27 gravity oil. The gas is being run through a compressor and about 300 gallons of gasoline are being produced daily. Tonner No. 2 was drilled to 1700 feet, about 150 feet deeper than No. 1. Few fields produce 400 and 500 barrel wells of 27 gravity oil at such depth, so the find is one of the richest in Southern California.

FLOWING 3500 BARRELS

The Continental Asphalt & Petroleum Co. has completed its Robinson B-9 well, in section 32, 13-10, near Taft, at a depth of 2790 feet. The flow is estimated at 3500 barrels by officials. The well is north of the company's No. 1 well on the Robinson lease.

NEW DEVELOPMENT CAMPAIGN

The acquisition of 960 acres of prospective oil land a few miles south of Maricopa, Cal., in northern Ventura county, by the Adams Drilling & Oil Co., is said to be the beginning of a large development compaign on the part of this company. It also has secured leases in Coleman county, Texas.

TO DRILL NEAR FORT STOCKTON

The Pecos Valley Oil Co., which owns in fee 2560 acres in the northern end of Pecos county, Texas formerly belonging to the Scott estate, has established offices in Los Angeles. Two favorable reports as to favorable oil conditions on the property were obtained from Adams & Reynolds of Ranger, Texas, and Hugh H. Tucker. A rig with full equipment has been shipped to Fort Stockton and development will shortly be under way. All the officers are California men, from Los Angeles, Hollywood and Pemona.

GAS AT 100 FEET

The Mountain House Standard Oil Co., composed of Williams, Colusa county, California, investors has struck a gas well at a depth of 100 feet half a mile north of the village of Mountain House in the same county. It is wet gas and estimated to produce two gallons of gasoline to the thousand cubic feet. The company has leases on 8000 acres in Colusa county and 12,000 in Sutter county, adjoining on the east, all on an eight royalty basis.

The Union Oil Co. of California has added another producer. This one is No. 18 on the La Merced lease at Montebello, coming in at 3000 feet and making 275 barrels a day.

Government Lost in Fight to Recover Leases in California

THE United States land office at Visalia, Cal., has just rendered a decision in favor of J. H. McLeod, defendant, in a contest instituted two years ago by the Navy Department trying to prevent McLeod from securing a patent to 640 acres of proven oil land in Kern county, being section 28, 31-23, within the naval reserve. The department charged dummy locators and lack of diligence in prosecuting of work under the Pickett act. Parties interested in the outcome are the United States Oil Co., which is operating on 80 acres; Caribou Oil Co., 80 acres; Record Oil Co., 40 acres; Columbus Midway Oil Co., 40 acres; Wilkes Bros., 80 acres, and Consolidated Mutual Oil Co., 320 acres. These companies had acquired their interests at various times from or through McLeod after he had obtained, on one application, a receiver's certificate and on another application a receiver's receipt. More than $1,000,000 had been invested in equipment and labor at the time the contest was filed, and about thirty producing wells had been brought in, the revenue from which has since been impounded with the federal receiver who has had charge of the properties in the meantime. The government attorneys have not as yet said whether or not they would demand a retrial or carry the case higher.

Two Hundred Seeking Leases in Kern County, California

WITH more than 200 applications for supposed oil territory under the provisions of the recently enacted oil land leasing law forwarded to the Secretary of the Interior from the Bakersfield and Taft, California, sections within the past ten days, it appears that never were there so many persons interested in the oil industry.

"I don't know of the time when I saw so many who would like to get into the oil game," said C. A. Barlow, prominent Kern county oil man. "But two obstacles are in the way of realization of the hopes of these people: First, the leasing system, which bars all but the big fellows, there being no chance whatever for men of moderate means; and next, the railway situation which makes it practically impossible for to obtain materials. So far as my companies are concerned, we are limiting ourselves strictly to production, doing the best we can without starting new work."

The land involved in the 200 applications for prospecting permits is located in the southern end of Kern county, running up to the edge of the Maricopa field and covers much territory that has heretofore been exploited. Some months are certain to pass before the applicants get action.

Several conditions are contributing to the lack of new development work warranted by the demand for oil in the various Kern county fields. According to one of the field officials of the Standard Oil Co., much of the lethargy is due to labor shortage, railroad tieups and a lack of steel and other materials. He says:

"Of course there is some development work going on here and there, in the various fields, but the big projects are not being carried out with the speed that the big companies would like. The reason is that the big and little companies alike are unable to obtain either steel or other materials which go into the making of an oil well. The wells my company are interested in have to be abandoned just where shortage overtakes us."

So the heirs of the aspiring oil magnates included in the 200 applicants for leases may have something to look forward to.

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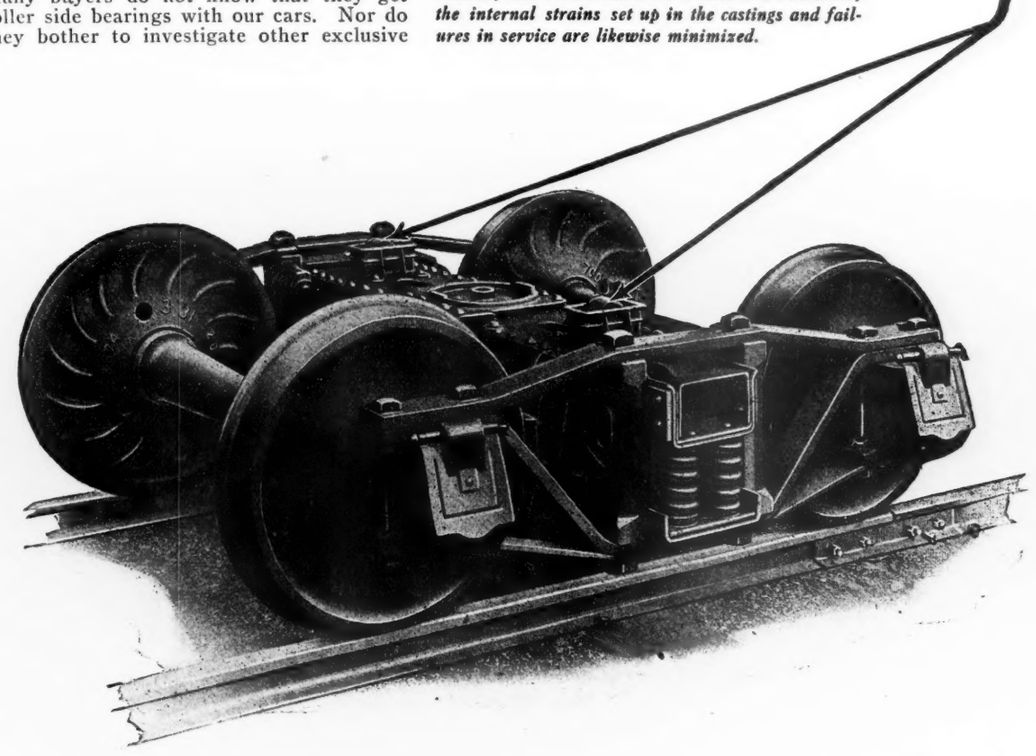

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Tracing Movement of Water in Oil Wells

Use of Detectors Subject Handled by A.W. Ambrose

CONCLUDING ARTICLE

This excerpt from the Bureau of Mines Bulletin No. 195 "Underground Condition in Oil Fields," now in press, is published by permission of the Director of the Bureau in order that it may be immediately available to the petroleum industry. This is the third and last installment. The first and second articles appearing in the two previous issues of The OIL WEEKLY.

A. W. Ambrose, superintendent, Bureau of Mines, Petroleum Experiment Station, Bartlesville, Oklahoma, the writer, wishes to express his appreciation for suggestions, information and assistance in the preparation of this article to W. E. Perdew, H. H. Hill and Dr. Eugene Merz.

IN most cases the use of dyes has not been entirely satisfactory. When the dye does not appear in a neighboring well the operator is not certain but that the color of the dye has been filtered out or otherwise destroyed, or that it was not properly introduced into the sand, and the water may still be coming from the well in which the dye was introduced. In short, if the dye shows, the results are positive; if it does not, nothing is proved. A few cases that have come to the attention of the writer are cited as examples of what may be expected in the use of organic dyes.

Kern River Oil Field, California

Some idea of the rate of travel of underground water, and concrete evidence of one well flooding another, were shown in some tests in the Kern River oil fields, near Bakersfield, California. Mr. Tom Saine, superintendent of the Petroleum Development Company (Santa Fe), informed the writer an aniline dye dissolved in water traveled from Alma Jr. well No. 2, section 4, township 29 south, range 28 east, to Petroleum Development Company well No. 16, section 4, township 29 south, range 28 east, a distance of about 1000 feet, as rapidly as he could walk the distance. Well No. 18 was making about 1000 barrels of water per day by the use of compressed air. This test was carried on prior to correction of the water in this well.[1]

Santa Maria Oil Field, California

Mr. J. C. Knoke used aniline dyes in two wells in the Santa Maria field, California. These wells were 300 feet apart and about 2700 feet deep. Dye was placed in one well but did not show in the second well after an observation lasting a week or ten days. Dye was then placed outside the water string in the second well and in about three hours it showed inside the casing, proving that the water string was at fault. The water string was pulled and a hole was found in the casing. The water string was repaired.

Olinda and Salt Lake Oil Fields, California

Mr. John T. Wootan, manager of the Amelgamated Oil Company, Los Angeles, California, advised[2] the writer of the use of dyes by his company in the Olinda and Salt Lake fields, California.

In 1907, aniline dye was put in Salt Lake well No. 309 and was later found in water well No. 307. The two wells were 680 feet apart.

In 1912, aniline dye was put on the outside of the water string of West Coast well No. 47, Olinda division, but no evidence of the dye was detected in other wells.

In 1914, aniline dye was put in well No. 36, West Coast Oil Company, as the Olinda Land Company claimed this well furnished water to their No. 9, 150 feet away. No evidence of the dye was found in No. 9.

Dye was also placed behind the water string in the Anaheim well of Mr. Wotan's company, but no results were obtained.

Of the five trials of dye, only one showed any conclusive evidence.

Midway Field, California

Aniline dyes were experimented with in the Midway field of California, in 1912 and 1913. Positive results were accomplished in several cases, but on the whole the tests were not satisfactory. In some cases an unsatisfactory result with dyes is due to the fact that the water is not coming from the well suspected and to which the dye has been added, hence the dye has no chance to travel. In those cases where the dye appeared in adjoining wells, the color was unmistakable and furnished conclusive proof that the water traveled from one well to another.

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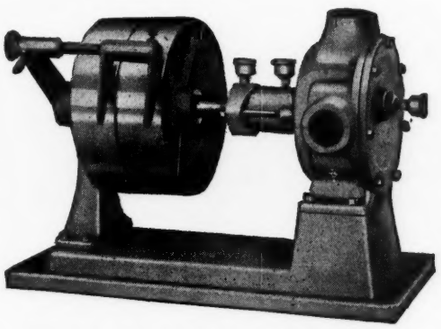

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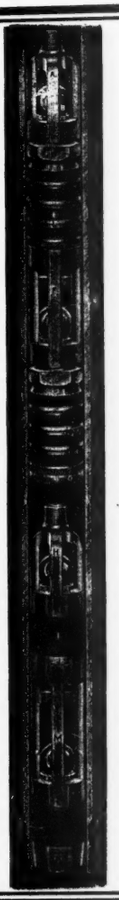

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An interesting check was used in Chanslor-Canfield and Midway Oil Company (C. C. M. O.), section 36, township 31 south, range 22 east (now Santa Fe) well No. 9, by the use of red and green organic dyes. On August 28, 1913, red dye was placed in this well and it appeared the following day in American Oilfields Company (Am. O.) No. 68, traveling a distance of approximately 900 feet. Two weeks later green dye was again put in the same well, C. C. M. O. No. 9, and it appeared in Am. O. No. 68 within three hours and fifteen minutes.

The list submitted below, in the table, shows the number of tests tried in that district and the results:[6]

RESULTS OF USE OF ORGANIC DYES IN MIDWAY FIELD, CALIFORNIA

WELL	Dye used—Lbs.	Date Put in	Date Detected	Where Detected	Dis. trav. —feet	REMARKS
Am. O. 60	20 Red	Aug. 9, 1912		Not		Pumped out all dye from No. 60 Aug. 29.
Am. O. 61	20 Red	May 4, 1912		Not		C. C. M. O. never found dye in neighboring wells. Bailed
C. C. M. O. 8	10 Red	Aug. 8, 1912	Aug. 14, 1912	Am. O. 67	350	dye out No. 61 Aug. 5, 1912.
Am. O. 67	50 Red	Sept. 23, 1912		Not		
Am. O. 67	50	Oct. 4, 1912		Not		Well idle until Oct. 6, 1913. Pumped red until Oct. 9, 1913. No trace in other wells.
C. C. M. O. 9	? Green	Sept. 11, 1913 10:30 a. m.	Sept. 11, 1913 3:15 p. m.	Am. O. 73	350	Remained bright green until Sept. 12, 1912.
C. C. M. O. 8	100 Red	July 20, 1913	Aug. 23, 1913	Am. O. 58	1500?	Record states "found red color in tank by No. 58." (Presumably Am. O. No. 58.)
C. C. M. O. 9	? Red	Aug. 28, 1913	Aug. 29, 1913	Am. O. 68	900	
C. C. M. O. 9	? Green	Sept. 11, 1913 10 a. m.	Sept. 11, 1913 1:15 p. m.	Am. O. 68	900	Water green in No. 68 on Sept. 12, 1913.
C. C. M. O. 12	100 Red	June 5, 1913		Not		All C. C. M. O. wells tested. No results.
C. C. M. O. 12	100 Red	June 12, 1913		Not		All C. C. M. O. wells tested. No results.
C. C. M. O. 12	25 Red	Sept. 13, 1913		Not		All C. C. M. O. wells tested. No results.
C. C. M. O. 16	15	March 22, 1914		No record		Put dye between casings.
	15	March 22, 1914		No record		Outside casings.
	20	March 25, 1914		No record		Through tubing to bottom well.
C. C. M. O. 17	12 Green	March 8, 1914		No record		Put dye between casings.
	15 Red	March 22, 1914		No record		Put dye between casings.
T. M.	30 Red	June 1, 1912		Not		Midway Royal claimed Toronto well flooding theirs.
T. M.	15	Sept. 1, 1913		Not		No trace of dye.
C. C. M. O. 2	35 Green	Nov. 1, 1913	No. 22, 1913	M. O. 5	800	Continued green for 24 hours.
C. C. M. O. 2	20 Green	Dec. 15, 1913		Not		No record of result.
C. C. M. O. 2	15 Green	April 11, 1914		Not		No record of result.

Trade nameof dye, "S. F. Green."
Am. O.—American Oil Fields Co., Sec. 36 T. 31 S. R. 22 E.
C. C. M. O.—Chanslor-Canfield & Midway Oil Co. (Santa Fe), Sec. 36 T. 31 S. R. 22 E.
T. M.—Toronto Midway Oil Co., Sec. 18 T. 31 S. R. 23 E. Midway Royal Oil Co., Sec. 19 T. 31 S. R. 23 E.
M. O.—Midland Oil Co., Sec. 16 T. 32 S. R. 23 E.

Coalinga, California

Fluorescein was used by the Shell Company of California in the fall of 1915 to test out a leaky water string. The dye was placed behind the casing, but after extensive bailing tests the dye did not show. This was due to no fault of the dye, as later work showed that the water was coming from below the shoe of the water string.

THE USE OF CHORIDES AND OTHER SALTS TO DETERMINE UNDERGROUND FLOW

Chlorine Method

The so-called "chlorine method" of determining the movement of underground water has been used, but its value in oil field water problems is doubtful, primarily because all oil field waters contain chlorides, and many of them contain large concentrations of chlorides.

This method was used successfully by A. Thiem in a study of movements of underground waters near Leipzig. Satisfactory results were obtained during a study of the new water supply system at Greiswald and Stralsund.[4]

A salt that is determined easily by chemical means is placed in an upstream well and occasional analyses made of the water in downstream wells to detect the salt. Ordinary salt (sodium chloride) was used by A. Thiem at Leipzig, as it had the advantage of not injuring the water.

It is well known that salts diffuse concentrically in every direction from the point of introduction, when dissolved in a body of water at rest, whether it be a still lake or a water-saturated sand; but if the water is in motion, the diffusion on the horizontal plane resembles the outline of a pear, with the small end at the point of introduction and the axis extending along the direction of the flow. The salt will be detected in the downstream wells in small quantities at first, but it will appear gradually in greater quantities. When the concentration of salt in two downstream wells is equal, a rough idea may be gained of the proportional rate of flow between each of these wells and the one upstream.

It is evident, from the fact that so many analyses are necessary, that the chemical test for determining the presence of salt must be simple and rapid. On account of the great number of samples that would have to be collected, and the difficulty of analyzing them, it is doubtful if this method will be used to any extent. Another objection which is evident to the practical operator is that he cannot detect the presence of salt in a downstream well by color or odor. He can rely only on a chemist's analysis. Prior to the use of a chloride, a determination must be made of the normal chloride content of the water from the wells, and the succeeding tests must be quantitative, as chlorine is always present.

Other chemicals, besides common salt, suggested in using the chlorine method are calcium chloride ($CaCl_2$), and ammonium chloride (NH_4Cl). Neither of these salts, however, has any particular advantage over ordinary salt in supplying the chlorine ion.

Nitrates

It has been suggested that nitrates be used as flow detectors. While practically all nitrates are readily soluble, their use is not to be recommended because they take a well-equipped laboratory and skilled chemist, both of which are rare in ordinary oil field practice. If nitartes are used, tests of the water should be made for their presence prior to their use. Contrast the use of nitrates with that of fluorescein, in which the color is evident to any one, and it is easy to see that for ordinary purposes the use of fluorescein is simpler.

Underground conditions may bring about the reduction of nitrates to nitrites or even to ammonia, for both of which there are delicate chemical tests.

Lithium Salts

It has been suggested that lithium salts be used as a flow detector, because these salts,

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except the carbonates, fluorides and phosphates, are readily soluble in water, and furthermore, because they do not generally occur in oil field waters. All salts of lithium that might in any way be formed in underground conditions in oil fields are soluble enough to give a solution which, upon concentration and proper treatment, will give the lithium line with the spectroscope. The determination of lithium by aid of the spectroscope is positive.

After the water samples have been collected they must in some cases be concentrated and certain metals removed before a test is made by the spectroscope. The objections to the use of such a method are that it requires a laboratory, an expensive instrument—the spectroscope—and an experienced man.

Slichter Electrical Method

Slichter has described[5] a method of measuring the velocity and direction of flow of underground water through sands at comparatively shallow depths. The method has been sugeted as of possible use in detecting the movement of underground waters in oil fields, but it offers no promise of practical application for this purpose. A brief description of the method used by Slichter in shallow water wells will make clear that it is not applicable to oil field practice.

The essential features of the method are as follows: A two-inch pipe, with the ordinary small drive point on the end, is driven or otherwise sunk to the shallow water sand under investigation. The drive point consists of a length of pipe two to eight feet long, with a funnel-shaped cast steel drive shoe on one end and perforated above the drive shoe. The perforated section should be opposite the water sand. Sand and silt are kept out of the hole by use of screen wire and No. 20 to 30 gauzed strainer.

A number of these wells are placed in a group, one well being placed in the center and termed the central well, the others termed radial wells which are sunk at equal distances from the central well and preferably but not necessarily at equal distances from each other. The radial distance is about four feet and the radial wells two or three feet apart. Different radial and chord distances may be more applicable to special cases, but the variations from these distances ordinarily used is not great.

The control well should be placed on the upstream side of the supposed flow and the radial wells so sunk that the line through the central well and the middle well of the three radial wells is parallel to the supposed direction of the underground flow.

The radial wells are provided with "electrodes" which are pieces of polished metal rods of approximately one-quarter inch in diameter and of about the same length as the drive point. Wooden plugs or other insulating mediums are fastened onto the bottom of these "electrodes" to insure that they do not come in contact with the two-inch casing.

A waterproofed insulated wire is soldered onto the top of the electrode and the electrodes are lowered to the bottom of the radial wells by means of this connection. Wires are also soldered to the tops of the two-inch casings of the central and radial wells. The wires attached to the casing and the wires attached to the electrodes are brought to a switchboard so arranged that connection can be made between the casing of the central well and the casings of any radial well or between the casing of any radial well and the electrode in it. A sensitive ammeter of either the direct reading or recording type and a suitable number of dry batteries are installed in connection with the switchboard in such a manner that the current produced by the batteries will flow from the central well to any radial well through the ground and back around to the central well through the electrical connections of the switchboard when proper switches are closed. The ammeter measures the amount of the current flowing. Suitable switchboard connections are also provided so that a current can be made to flow between the casing and electrode of each of the radial wells, the current being measured by the ammeter.

To conduct a test, the ammeter readings are recorded for the central well to the casings of each radial well and for the electrodes in the radial wells to each of their casings. A suitable electolyte (ammonium chloride, sodium chloride, or sodium hydroxide are commonly used) is introduced into the central well. This is done by filling a perforated tube with the powdered or ganular electolyte and lowering it to the bottom of the well, causing as little agitation as possible and leaving it there until the electolyte has dissolved. The perforated tube is removed from time to time and refilled with electolyte to keep up the concentration in the central well.

When there is a flow of water through the sand in which the well points are located, the electolyte dissolved in the central well is carried by the "underflow" in the direction of its flow and consequently towards one of the radial wells. An electolyte dissolved in water increases the conductance of the solution so that as the solution from the central well is carried towards a radial well more of the current will flow between the casings of the two wells.

After the electolyte is introduced into the central well, hourly or half-hourly ammeter readings of the current that is allowed between the central casings and radial wells are taken.

As the electolyte approaches a downstream well, there is a gradual increase in ammeter readings, with a sudden and sharp increase in the ammeter readings when the electolyte arrives at the well.

The velocity of the underflow can be computed by dividing the distance between the central well and the well in which the electolyte appears by the length of time it takes for the electolyte to travel from the former to the latter.

Slichter used from four to ten pounds of electolyte in his tests, but the wells were shallow and close together. Much greater quantities must be used in other applications of this method where the underflow is slow or over great distances.

The possibility of applying this method or a modification of it to oil field waters is very remote, because the wells are spaced too far apart, are too deep with consequent long columns of fluid in them, and the bulk of oil field waters contain such concentrations of salts that an additional small amount added for the workings of this method cannot be detected.

[1]See Bulletin No. 82, Second Annual Report of the State Oil and Gas Supervisor of California, 1916-1917, pp. 255-260.

[2]Personal communication, April 14, 1919.

[3]Information furnished by G. S. Rogers, Geologist, U. S. Geological Survey.

[4]Slichter, Charles S., The motion of underground waters; U. S. Geol. Survey Water Supply Paper 67, pp. 46-48.

[5]Slichter, Charles S., Description of underflow meter used in measuring the velocity and direction of underground water; U. S. Geol. Survey Water Supply Paper 110, 1905, pp. 17-31; or Slichter, Charles S., Field measurements of the rate of movement of underground waters; U. S. Geol. Survey Water Supply Paper 140, 1905, pp. 16-28.

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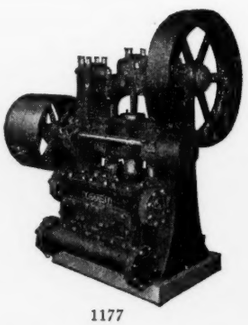

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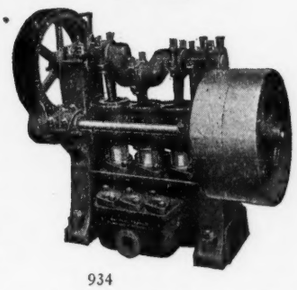

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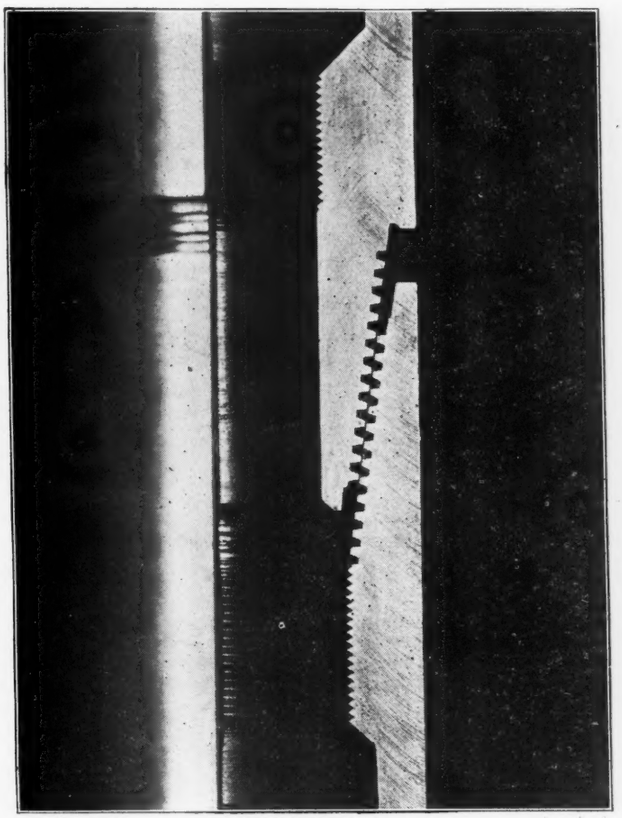

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Sharp crests do not, as in the case of "V" threads, deliver to each other, as they come together, a lateral blow. Hughes threads HAVE NO sharp crests.

Blunt surfaces slide together without injury, as shown in the actual photograph of a cross-section of a HUGHES TOOL JOINT.

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Nickel Alloy Steel, $50 for 4-inch size
Carbon Steel—4x18 inches, $43.05
4x20 inches, $45.55

Other sizes in proportion

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Houston, Texas

Lube Worth $13,000,000 Was Exported During Month of April

WASHINGTON, D. C., June 15.—Exports of lubricating oil during the month of April totaled nearly thirteen million dollars in value, according to figures just secured from the Department of Commerce by the Washington Bureau of The OIL WEEKLY. Shipments of paraffin oils during the month amounted to 552,098 gallons, valued at $207,581, but 38,176,788 gallons of other oils were also exported, with a value of $12,747,689.

Lubricating oil is rapidly becoming an important factor in our foreign trade, and exports for the fiscal year which ends with June will total over one hundred and fifty million dollars in value. While our markets for paraffin oils are confined to fifteen foreign countries, more than eighty countries use other American lubricating oils.

Our largest foreign market for paraffin oil is Germany, which during April imported 155,933 gallons, valued at $35,413. Brazil imported 129,745 gallons, valued at $53,008; Uruguay 83,431 gallons, worth $33,137; Argentina 55,443 gallons, with a value of $39,824; Cuba 58,058 gallons, valued at $27,427, and Mexico 48,847 gallons, with a value of $12,102. Our other exports consisted of small shipments to France, England, Canada, Honduras, Panama, Jamaica, Colombia, Peru and New Zealand.

England is our most important customer for other lubricating oils, her imports during the month totaling over three million dollars. France took more than one and three-quarter million dollars' worth during April, and Germany slightly over a million dollars' worth. Details of our foreign trade in these oils during the month are shown in the following table:

	Gallons	Dollars
Belgium	2,306,523	$ 647,211
Bulgaria	1,329,536	273,000
Denmark	899,050	336,015
France	5,153,319	1,768,621
Germany	4,275,361	1,066,254
Gibraltar	52,000	17,950
Greece	70,512	21,363
Iceland and Faroe Islands	2,500	1,250
Italy	2,345,584	884,965
Malta, Gozo, Cyprus Is...	50	112
Netherlands	139,161	62,225
Norway	219,338	85,852
Poland and Danzig	250	30
Portugal	87,023	30,971
Roumania	7,800	4,230
Russia in Europe	54	54
Spain	405,568	166,029
Sweden	687,643	242,749
Switzerland	20,544	7,089
Turkey in Europe	9,274	4,125
England	11,505,355	3,444,740
Scotland	1,291,735	934,362
Ireland	113,010	48,695
Bermuda	9,522	4,201
British Honduras	1,281	1,071
Canada	430,334	189,912
Costa Rica	6,376	4,696
Guatemala	13,943	4,486
Honduras	5,914	3,338
Nicarauga	9,392	5,562
Panama	119,759	53,375
Salvador	9,257	4,696
Mexico	91,498	32,129
Miquelon, Langley, etc. ..	11	6
Newfoundland and Labrador	13,955	7,308
Barbados	3,240	1,829
Jamaica	10,113	4,325
Trinidad and Tobago	92,304	32,274
Other British W. Indies..	24,547	7,895
Cuba	613,848	295,403
Virgin Islands of U. S. ..	203	160
Dutch West Indies	2,376	929
French West Indies	14,050	10,807
Haiti	3,267	1,808
Dominican Republic	40,621	29,195
Argentina	673,886	303,301
Bolivia	1,592	1,529
Brazil	226,155	104,862
Chile	151,403	63,739
Colombia	14,918	8,044
Ecuador	4,274	2,512
British Guiana	78,000	27,747
Dutch Guiana	52,034	15,596
Paraguay	611	360
Peru	59,014	27,101
Uruguay	6,726	4,368
Venezuela	24,777	12,804
Aden	3,522	1,471
China	216,476	76,247
Chosen	738	254
British India	473,510	178,673
Straits Settlements	151,101	53,284
Other British E. Indies..	34,574	13,337
Dutch East Indies	779,212	127,860
French East Indies	25,100	8,072
Hongkong	54,190	19,334
Japan	861,497	322,769
Siam	750	435
Turkey in Asia	13,262	3,853
Australia	490,475	163,435
New Zealand	217,338	81,137
Other British Oceania ...	210	167
French Oceania	1,708	1,145
Other Oceania	640	438
Philippine Islands	43,469	22,100
British West Africa	112,389	$ 23,165
British South Africa	393,782	156,481
British East Africa	51,469	20,498
Canary Islands	9	24
French Africa	156,500	37,818
Portuguese Africa	184,460	69,070
Egypt	180,025	51,362

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Spindle Oils	Fuel Oils	Gear Grease
Motor Oils	Diesel Fuels	Axle Grease
Engine Oils	Bunker Oils	Solid Lubricants
Machine Oils	Cylinder Oils	Petroleum Coke
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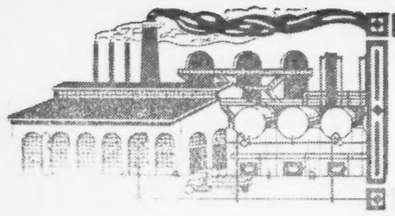
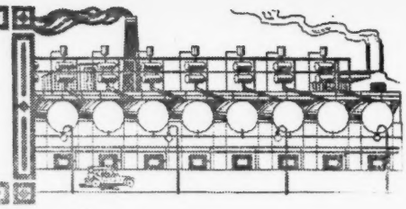


REFINERY ACTIVITIES



Sinclair Ships Solid Train of Lubricants From Houston Plant

A SOLID train of thirty tank cars loaded with lubricants left Houston Thursday for Chicago, the shipment being made by the Sinclair Refining Company, and being billed to the same company at Chicago. The Sinclair organization has many filling stations in the Chicago district, as well as at points in the East and North.

Each of the tank cars in the train has a capacity of between 8000 and 10,000 gallons and the lube will be retailed around $1 a gallon, making the special train one of some value. Sinclair has been shipping a train load of fuel oil every two weeks for some time now to points in New Mexico, but this is the first solid train of lube to go from this refinery.

Sinclair is fast builidng a large and important selling organization, and the Sinclair oils are even better known in other sections of the United States than they are in Texas where much of the lube is made. Coastal crudes are used entirely by Sinclair's Houston plant for making lube.

LAKE CHARLES REFINERY CHANGES NAME AND INCREASES ITS OUTPUT

The Calcasieu Oil Refining Company of Lake Charles, Louisiana, which has been in active operation for two years, has been reorganized under the name of the Columbia Refining Corporation and will take immediate steps to enlarge the company's refinery at Westlake, La., to 1500 barrels and to increase it later to 3000 barrels ,according to Malcolm Burns, secretary of the new organization. Two more stills and other machinery will be added to make the refinery a complete lubricating plant.

William H. Managan, who was one of the former private owners of the plant, will be president of the new company. Harold M. Henshaw, who has been general manager of the Calcasieu refinery for two years, is treasurer, and O. D. Stokes, general superintendent of the plant for two years, will retain that position with the Columbia Refining Corporation. Mr. Stokes was with The Texas Company for ten years.

If the crude oil can be obtained, it is the intention of the company to construct pipe lines from oil fields near the refinery. A number of tank cars will probably be bought.

NEW TANK CARS COMING

The La Porte Oil & Refining Company reports that work is progressing nicely on additions to its refinery at Morgans Point near Houston. Thirty new tank cars have been purchased and the cars are about ready to be started for Houston. Two more cars of material is needed before the additions at the plant can be completed.

PIPE LINE OIL TAXES MORE THAN $500,000 MONTH OF MAY

Washington, D. C., June 30.—A total of $531,092.01 was collected as taxes on oil from pipe lines during the month of May, according to figures made public Wednesday by the Internal Revenue Bureau, an increase of more than $140,000 over the collections for the corresponding month last year. This brings the total for the eleven months of the fiscal year to $7,529,510 from this source, as compared with $4,926,657 during the corresponding period of 1919.

Collections from all sources during May aggregated $274,591,315 as compared with $153,628,912 during May of last year. Included in this total were a number of items of interest to the oil industry, among them the following: $9,327,834 collected on freight shipments; $1,472,085 on express packages; $6,898,503 on personal transportation; $461,968 on seats, berths and staterooms, and $2,147,329 on telegraph and long distance telephone messages.

GULF WINS CASE

Washington, D. C., June 30.—The Interstate Commerce Commission has upheld the contention of the Gulf Refining Company that rates on shipments of fuel oil in carloads moving from Bergen Junction, N. J., to Schenectady, N. Y., during the spring and summer of 1917 were unreasonable, and have ordered the Delaware, Lackawanna & Western Railroad to return to the company all charges collected in excess of eleven and six-tenths cents per hundred pounds, with interest. The company was charged as high as eighteen cents a hundred, it was set forth in the complaint, which covered seventy carloads of fuel oil.

CRUDE OIL PRICES

Effective May 13

NORTH TEXAS

Electra	$3.50	Petrolia	$3.50
Burkburnett	3.50		

NORTH CENTRAL TEXAS

All fields	$3.50
Corsicana Light	3.50
Corsicana Heavy	1.75

LOUISIANA

Caddo 38 gravity and above	$3.50
Caddo 35 to 37.9 gravity	3.40
Caddo 32 to 34.9 gravity	3.35
Caddo below 32 gravity	2.50
Homer 38 gravity and above	3.25
Bull Bayou 38 gravity and above	3.15
Red River 38 gravity and above	3.00
De Soto Crude	3.40
Crichton Crude	3.00
Elm Grove below 32 gravity	2.45
Jennings	3.00
Vinton	3.00
Edgerly	3.00

GULF COAST

Sour Lake	$3.00	Goose Creek	$3.00
Humble	3.00	Markham	3.00
West Columbia	3.00		

SOUTHWEST TEXAS

Somerset	$3.50

KANSAS AND OKLAHOMA

All fields (except Healdton)	$3.50
Duncan-Comanche	3.50
Healdton	2.75
Hewitt	3.50

EASTERN STATES

Pennsylvania	$6.10	Somerset	$4.00
Cabell	3.92	Ragland	2.10
Corning	4.25	Illinois	3.77
North Lima	3.73	Indiana	3.63
South Lima	3.73	Plymouth	3.23
Wooster	4.05	Princeton	3.77

WYOMING

Elk Basin	$3.10	Big Muddy	$2.75
Grass Creek	3.10	Rock Creek	$2.75
Lance Creek	3.05	Mule Creek	2.05

CALIFORNIA

(Crude oil prices at the well.)

In the prices given below, figures indicating gravity are inclusive:

San Joaquin Valley and Whittier-Fullerton Fields

14 deg. to and including 17.9 gravity	$1.48
18 deg. gravity	1.49
19 deg. gravity	1.51
20 deg. gravity	1.54
21 deg. gravity	1.58
22 deg. gravity	1.63
23 deg. gravity	1.69
24 deg. gravity	1.76
25 deg. gravity	1.84
26 deg. gravity	1.93

and for each increase in gravity of one (1) full degree above 26 deg. gravity, up to and inclusive of 34.9 deg. gravity, ten (10) cents per barrel additional.

35 deg, gravity and above	2.83

CANADIAN CRUDE

Petrolia	$3.70

SEVEN TANKERS LOADING AT THE GULF REFINING COMPANY DOCKS AT PORT ARTHUR. Photo by Allen, Houston.

Shipping Board in Market for Bunker Oil for Long Periods

THE Division of Supply and Sales, United States Shipping Board Emergency Fleet Corporation, created a great deal of surprise when, on June 26 it made known that it was in the market to place contracts for periods of one, three or five years for the annual supply of something more than 27,000,000 barrels of "C" grade bunker fuel oil.

The delivery of the oil to be contracted for will begin about September 1, 1920, for use by all ships under the ownership or control of this corporation. As an inducement to bidders, and to overcome the shortage of tankers, the Board agrees to place at the disposal of the successful bidders tank steamer tonnage, at the Government time charter rate of $6.50 per deadweight ton per month, in the amount necessary.

Thirteen ports in the United States and ports including the Panama Canal, Virgin Islands, Bermuda, Azores, France, Tunis (South Africa), Cape Verde Islands and Brazil, making a total of twenty-two, are named as delivery points. Tenders will be considered at all other United States domestic and adjacent ports from which bidders may be prepared to make delivery. The tankers to be supplied by the board will move the crude petroleum from producing terminals to refining centers and move the fuel oil supplied at any port from the successful bidders' nearest refining centers to such port or ports where final delivery is to be made.

The quantity of oil asked for is estimated as being approximately fifty per cent of the requirements of the American merchant marine for 1921. The Shipping Board has experienced considerable difficulty of late in securing its requirements of fuel oil. In March it placed contracts that furnished a sufficient quantity, when supplemented by a number of rather large contracts with individual companies, for a six months period from April 1. Persons interested in the business expected an announcement, but covering one year's requirements.

The ports at which deliveries are to be made and the quantities desired at each are as follows:

Port	Quantities—Bbls. 42 U. S. gal. Month	Year
Boston	77,000	925,000
New York	775,000	9,300,000
Baltimore	125,000	1,500,000
Norfolk	290,000	3,475,000
Philadelphia	250,000	3,000,000
Charleston	33,000	400,000
Savannah	100,000	1,200,000
Jacksonville	31,000	375,000
Mobile	31,000	375,000
Pensacola	15,000	175,000
New Orleans	96,000	1,150,000
Port Arthur	19,000	225,000
Galveston	40,000	475,000
Panama Canal	125,000	1,500,000
St. Thomas, V. I.	40,000	480,000
Bermuda	10,000	120,000
Ponta del Gada, Azores	31,000	375,000
Brest, France	83,000	1,000,000
Bizerta, Tunis	18,000	216,000
Durban, S. A.	15,000	180,000
St. Vincent, C. V. I.	23,000	275,000
Rio de Janeiro, Brazil	42,000	500,000

The above quantities will be supplemented by perhaps as much as 4,000,000 barrels of fuel oil which will be obtained by the Government during the year 1921 from the royalties on Government lands leased by the Department of the Interior. The latter department is expected to have a considerable amount of crude petroleum available for sale to other Government agencies as a result of the operation of the oil lands leasing bill, passed by Congress, opening public lands for development.

SHIPPING BOARD ANNOUNCES SPECIFICATIONS OF FUEL OIL

Washington, D. C., June 28.—Specifications on the fuel oil for which bids will be opened July 15 were today secured from the United States Shipping Board by the Washington Bureau of The OIL WEEKLY. These specifications call for a hydrocarbon oil free from grit, acid and fibrous or other foreign matter likely to clog or injure the burners or valves, and be of first-class merchantable grade, suitable for use as fuel for steamship operation.

The unit of quality to be the barrel of 42 United States gallons of 231 cubic inches, at a standard temperature of 60 degrees Fahrenheit. For every decrease or increase of temperature of 10 degrees Fahrenheit (or proportion thereof) from the standard temperature, 0.4 of one per cent (or pro rated percentage) to be added to or deducted from, respectively, the measured or gauged quantity for correction.

The minimum flash point not to be lower than 150 degrees F. (Abel or Pennsky Marten's closed cup), or 175 degrees F. (Tagliabue open cup). The water and sediment not to be over one per cent. If in excess of one per cent the oil may be rejected, or if accepted, the excess to be subtracted from the volume.

Fuel oil supplied hereunder to have a minimum gravity of 16 degrees Beaume, except California oils to have a gravity not lower than 14.5 degrees Beaume. Under no circumstances should the temperature of fuel oil when placed in a ship's tank, exceed 120 degrees F. The right is reserved to reject any and all deliveries not so conforming.

So far as gravity is concerned, the companies will be asked to bid upon such oil as they are best able to offer, provided it is not lower than 15 degrees, except in the case of California oils, on which the minimum is 14.5 degrees.

The successful bidder must agree to maintain on hand at all times sufficient supply to meet the minimum estimated requirements for the period of next fifteen days, and advise the buyer immediately in event of probable inability to protect to this extent. Bidders must furnish full particulars concerning their shore facilities and barge and tug equipment at each of the ports where they propose to furnish fuel oil, as above set forth.

Should the successful bidder's facilities for transporting fuel oil to meet the buyer's requirements be inadequate, the buyer will favorably consider any reasonable request for additional transportation facilities, and bidders should indicate in their bids to what extent this will be necessary. The rates for this service accompany these proposals and will remain constant during the period thereof.

GENERAL PROTEST AGAINST SEALED CAN REQUIREMENT

A general protest against an order of the Minnesota Commisisoner of Weights and Measures which requires that refined products be delivered in sealed cans to filling stations, instead of tank wagons through hose, will be made by all dealers affected, according to the American Independent Petroleum Association. A bulletin says:

A meeting has been called by both this association and the Independent Oil Men's Association at the state capital, Old Capitol Building, St. Paul, Minnesota, June 29, at 10 a. m., and we propose to make a very vigorous protest against the enactment of the new regulation. All jobbers who are interested in this subject are requested to be present at this conference without fail, as it must be conclusively demonstrated to the commissioner that the proposed regulations are absolutely impractical and impossible.

Guido Piggott, general agent for the Roxana Petroleum Co., in Louisiana, received notice that his subscription to The Oil Weekly had expired and he came to Houston to pay it this week.

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WILDCATS FROM ALL SECTIONS

Central West Texas Wildcats

BROWN COUNTY—Cen-Tex Oil Co.'s No. 1 Sudderth, derrick; Crown Oil & Gas Co.'s No. 1 Childress, derrick down; Janellen Oil Co.'s No. 1 Goggin State Bank Lands, making 10,000,000 cubic feet gas, completed at 1140 feet; Johnelley et al's No. 2 Greeley, derrick down; Midway Oil Co.'s No. 1 Blair, shut down for small shot 2905 feet; Martin Oil Co.'s No. 1 Stone, shut down; McKamey et al's No. 1 Irby, drilling 2750 feet; Rucker Oil Co.'s No. 1 Grantham, temporarily abandoned; The Texas Co.'s No. 1 Baugh Ranch, shut down 2505 feet; Tex-Penn Oil Co.'s No. 1 Wheeler, drilling 2995 feet; Townsend Oil Co.'s No. 1 Windham, rig; Williamson & Williamson's No. 1 Cox, setting casing 1880 feet.

CALLAHAN COUNTY—Alamo Petroleum Co.'s No. 1 Hart, shut down 2745 feet; Allen & Urbin's No. 1 Tabor, drilling 2650 feet; Bryon Union Oil Co.'s No. 1 Hennessey, shut down for casing 580 feet; Clyde Callahan Oil Co.'s No. 1 Woody, shut down 990 feet; Consolidated Oil Co.'s No. 1 C. E. Barr, shut down 1495 feet; 1 J. A. & J. Barr, waiting on tools; W. D. Greenlee's No. 1 Harris, shut down for crew 1720 feet; J. L. Hill et al's No. 1 Vestol, setting casing 823 feet; L. F. Litzinger's No. 1 Albin, rigged up; 1 Gooch, drilling 450 feet; Oharra et al's No. 1 Gorsuch, timbers; Ohio Cities Gas Co.'s No. 1 Grant, drilling 2368 feet; Pierce Oil Corp.'s No. 1 McGowan, drilling 3415 feet; 1 Gilliland, fishing 1200 feet; 1 Russing, rig; Ranger Andrews Oil Co.'s No. 1 Odom, shut down 2607 feet; Roxana Petroleum Co.'s No. 1 Hart, drilling 3705 feet; Seaman Oil Co.'s No. 1 Lee, under-reaming 1740 feet; Texas Midland Petroleum Co.'s No. 1 Powell Leggett, drilling 1975 feet; Tex-Penn Oil Co.'s No. 1 Woods, reported standing 700 feet of oil in the hole, with very little gas, cleaning out 3520 feet;Vander Weider's No. 1 Harris, drilling 1400 feet; Sprawles et al's No. 1 Sprawles, shut down 376 feet.

COKE COUNTY—Allen & Boren's No. 1 Campbell, derrick; Allen & Shaffer's No. 1 Arlege, shut down for crew 1097 feet; Crotty Oil Synd.'s No. 1 Fletcher, spudded and shut down 25 feet; 1 Harris Bros., shut down for fuel 1990 feet; Robert E. Lee Oil Co.'s No. 1 Stroud, shut down 3300 feet; Thomas & Ludlow's No. 1 Sauls, some material; West Texas Production Co.'s No. 1 Hamilton, shut down for orders 1515 feet; 1 Wilkens, shut down for sand line 500 feet.

COLEMAN COUNTY—Arizona Oil Co.'s No. 1 Adams, fishing 2750 feet; Gulf States Oil Co.'s No. 5 Babbington, spudded and shut down; Gladys Belle Oil Co.'s No. 5 Pope, making 435 barrels oil and 10 barrels water, 1590 feet; 2 Fuller, making 150 barrels salt water, setting packer 1585 feet; 6 Garrett, making 5,000,000 cubic feet gas with 40 barrels oil 1465 feet; 2 Campbell, rigging up; Garner Oil Co.'s No. 1 Debrill, drilling 2950 feet; Hagler Brown Oil Co.'s No. 1 Blanton, machine on the ground; Dr. J. J. Hickman et al's No. 1 Burkett, timbers; Magnolia Petroleum Co.'s No. 1 Woodward, fishing 2450 feet; 10 Morris, under-reaming 1120 feet; Mitchell & Sons' No. 3 Gray, shut down 740 feet; 7 Gray, location; 1 Debrill, rigging up; Naomi Oil Co.'s No. 2 Lee Vaughn, will abandon, full of salt water 1011 feet; Prairie Oil & Gas Co.'s No. 1-A Miller, rigging up; Pippen Oil Co.'s No. 1 Burke, fishing for tools 2765 feet; A. E. Roth et al's No. 1 Overall, fishing for tools 2350 feet; Seaman Oil Co.'s No. 1 Parker, ready to spud new hole; Simms Oil Co.'s No. 1 Debrill, shut down for orders 3500 feet: Texas Production Co.'s No. 1 Creswell, under-reaming 1750 feet; Texas O Wa Oil Co.'s No. 1 Debrill, spudded and shut down.

CONCHO COUNTY—Leonard Petroleum Co.'s No. 1 Warring. shut down 3350 feet; Shultz Oil Co.'s No. 2 Shultz, shut down 3212 feet; Texas Meers Oil Co.'s No. 3 Hartgrove, drilling 425 feet; Texas California Oil Co.'s No. 1 Ledbetter, derrick.

FISHER COUNTY—Ashton et al's No. 1 Robertson, shut down 190 feet; F. G. Gillock's No. 1 McWhirter, rig; Lincoln Oil Co.'s No. 1 Crowley, rig; Moss & Foster's No. 1 Lewis, shut down for casing 805 feet; Mineola Oil Co.'s No. 1 Lanus, shut down 2720 feet; Scott & Braden's No. 1 Harris, shut down 630 feet; Sebring et al's No. 1 Williamson, rig burned down, small show of oil, shut down 1490 feet; Western Southern Oil Co.'s No. 1 McCall, trying to set 8-inch casing inside 10-inch, which has collapsed at 1810 feet; Wilcox et al's No. 1 Barron, drilling 2995 feet; 1 Hodges, drilling 2449 feet.

Wildcat Wells in Fisher and Mitchell County Showing Oil

SEBRING et al's No. 1 Wallingham, in Fisher County, is rig burned down with small showing of oil and gas at 1490 feet.

In Mitchell County the Underwriters Prod. & Ref. Co.'s No. 1 T. & P. Land is making 15 barrels of 26 gravity oil from a sand at 2435 feet, with a little gas.

The Gladys Belle Oil Co.'s No. 5 Pope, which was completed several weeks ago with an initial production of 500 barrels at 1590 feet, has begun to show a little salt water and is making 435 barrels of oil with about 10 barrels of salt water this week. The same company's No. 2 Fuller is reported making 150 barrels of oil and some salt water at 1585 feet. No. 6 Garrett is making 5,000,000 cubic feet of gas with about 40 barrels of oil, at 1465 feet.

In Brown County the Midway Oil Co.'s No. 1 Blair is still shut down for a shot at 2905 feet. The Janellen Oil Co.'s No. 1 Goggin State Bank Lands has been shut in as a gas well and is making 10,000,000 cubic feet of gas at 1140 feet.

The Tex-Penn Oil Co.'s No. 1 Woods is reported cleaning out with 700 feet of oil in the hole, with a little gas at 3520 feet.

In Coleman County the Naomi Oil & Gas Co.'s No. 2 Lee Vaughn is full of salt water and is preparing to abandon at 1011 feet.

HAMILTON COUNTY—O. F. Dickerson's No. 1 Anderson, shut down; Laughner Bros.' No. 1 Schrank, shut down for crew 3475 feet; 1 Streeter, shut down for crew 3225 feet; Harrington & Robertson's No. 1 House, shut down 2280 feet.

IRION COUNTY—Spellman Oil Co.'s No. 1 Tankersley, shut down 722 feet.

JONES COUNTY—Kramer & Codman's No. 1 Harrell, cleaning out cave 1940 feet; Liberty Bell Oil Co.'s No. 1 Culbertson, rig; Security Banking & Inv. Co.'s No. 1 Sears, shut down 3015 feet; C. & H. Oil Co.'s No. 1 Cullom, drilling 400 feet.

LAMPASAS COUNTY—Boston Lampasas Oil Co.'s No. 1 Nail, shut down for fuel 1585 feet; Defee et al's No. 1 La Compt, shut down 1518 feet; Harwell et al's No. 1 White, shut down 1437 feet; Lekey & Harris' No. 1 Baxter, shut down 260 feet; Kempner et al's No. 1 Votaw, fishing for bit 110 feet; Melma Marvin Oil Co.'s No. 1 McCrea, drilling 1475 feet; Price et al's No. 1 Grives, shut down for fuel 2125 feet; Texoleum Trust Co.'s No. 1 Hill, shut down 1100 feet; Western Lampasas Oil Co.'s No. 1 Whittenberg, shut down for repairs 1495 feet; Waxa Tex Oil Co.'s No. 1 White, shut down for orders 950 feet.

MITCHELL COUNTY—Colorado Texas Oil Co.'s No. 1 Foster, fishing 495 feet; Travelers Oil Co.'s No. 1 Landers, drilling 450 feet; Underwriters Prod. & Ref. Co.'s No. 1 T. & P. Land, preparing to shoot 400 quarts at 2435 feet, well now making 15 barrels 26 gravity oil with a little gas between 2340 and 2435 feet; 1 Morrison, shut down 268 feet.

McCULLOCH COUNTY—Cosa Oil Co.'s No. 1 Shelton, shut down for under-reamer 1065 feet; Daley et al's No. 1 Dalton, under-reaming 1070 feet; Douglas Oil Co.'s No. 1 Crothers, shut down 2210 feet; Twin Girl Oil Co.'s No. 1 White, rigged up; 1 W. M. & G. White, rigged; Texas Oil Ref. Co.'s No. 4 Dutton, shut down for casing 776 feet; S. A. Thomas et al's No. 1 White, will abandon 3410 feet; Thomas et al's No. 1 Craig, pulling casing to abandon 3351 feet; Meadows et al's No. 1 Capps. drilling 700 feet.

MILLS COUNTY—Bisbe Texas Oil Co.'s No. 1 Westerby, shut down for casing 1015 feet; Fidelity Oil Co.'s No. 1 Young, shut down 2042 feet; Mills County Oil & Gas Co.'s No. 1 Cryer, shut down for orders 2310 feet; Simms Oil Co.'s No. 1 Timms, tools recovered; Texas Dual Oil Co.'s No. 1 Hupstutter, shut down 275 feet; Texas Prod. Co.'s No. 1 Locksla, shut down for casing 2940 feet.

NOLAN COUNTY—Nolan County Oil & Gas Co.'s No. 1 Montgomery, drilling 3495 feet; Otera Oil Co.'s No. 1 Booth, shut down 250 feet; Ranger Western Oil Co.'s No. 1 Althoff, under-reaming 715 feet; Ranger Extension Oil Co.'s No. 1 Woodrum, fishing 520 feet; Shallenberger et al's No. 1 Harris, rigged up; Wm. Turner et al's No. 1 Jordan, drilling in new hole at 320 feet; Wichita Nolan Oil Co.'s No. 1 Kutman, drilling 2390 feet.

RUNNELS COUNTY—Bapst & Wilson's No. 1 Karnegay, shut down 125 feet; Lacy et al's No. 1 Russell, shut down for under-reamer 2300 feet; Nelson & Nelson's No. 1 Spreen, shut down 500 feet; 1 Hightower, shut down 3195 feet; Runnels County Oil Co.'s No. 1 Pfluger, under-reaming 2047 feet; Safety First Oil Co.'s No. 1 Allen, shut down for fuel 2401 feet; Western Petroleum Co.'s No. 1 Richardson, spudded and shut down; Winters Oil Co.'s No. 1 Seale, shut down for fuel 1700 feet.

SAN SABA COUNTY—Century Oil Co.'s No. 1 Gray, shut down for orders 825 feet; Royal Duke Oil Co.'s No. 1 Heatherly, trying to shut off water 1210 feet; Wichita Oil & Gas Co.'s No. 1 Sloan, drilling 525 feet.

STERLING COUNTY—Allied American Oil Co.'s No. 1 Foster, location; McCraley Oil Co.'s No. 1 Douthit, drilling 1650 feet; Sterling Oil Co.'s No. 1 W. L. Foster, rig on the ground.

SCURRY COUNTY—Oklahoma Snyder Oil Co.'s No. 1 Snyder, rigged up; Snyder Oil Co.'s No. 1 Cotton, drilling 500 feet; 1 Walker, rig down, 250 feet; Stanton Oil Co.'s No. 1 Riley, shut down for stem 2375 feet; 1 Frevey, timbers; Loraine Penn Oil Co.'s No. 1 Wampkin, derrick.

SHACKLEFORD COUNTY—Apex Oil Co.'s No. 1 Garlitz, shut down 490 feet; Associated Oil Co.'s No. 1 Snyder, setting casing 3875 feet; 2 Snyder, fishing 2375 feet; Baird Petroleum Co.'s No. 1 Dyer, under-reaming 2280 feet; Central Oil Co.'s No. 1 Fite, shut down 120 feet; Brazos River Oil Co.'s No. 1 Hill, location; 1 King, location; Empire Gas & Fuel Co.'s No. 1 Reynolds, fishing 3557 feet; Ibex Oil Co.'s No. 1 Poindexter, shut down 2345 feet; Murphy & Bolanz's No. 1 Conrad, fishing 2330 feet; Sinclair Cons. Oil Corp.'s No. 1 Reynolds, under-reaming 2130 feet; Smith et al's No. 1 Merritt, repairing derrick 490 feet; The Texas Co.'s No. 1 Webb, shut down 2410 feet; Texhoma Oil & Ref. Co.'s No. 1 Black, drilling 2950 feet; Texas Oil & Ref. Co.'s No. 1 Driggers, straightening hole 1295 feet; Texas Cushing Oil Co.'s No. 1 Proctor, setting casing 4435 feet; 1 Colbert, shut down for casing 1540 feet; Virginia Ref. Co.'s No. 1 Pettus, rig; Ken-Tex Oil Co.'s No. 1 Hubbard, shut down 230 feet.

TAYLOR COUNTY—Allison & York's No. 1 Denman, location; 1 Hale, swedging casing 1305 feet; Burford & Brinn's No. 1 Butman, shut down 800 feet; Davis et al's No. 1 Joyce, waiting on tools; Erath et al's No. 1 Bilberry, shut down 330 feet; 2 Bilberry, rig; Gillispie et al's No. 1 Clark, fishing 2410 feet; Galbraith et al's No. 1 Parker, fishing 1205 feet; Security Banking & Inv. Co.'s No. 1 Bland, fishing 2410 feet.

TOM GREEN COUNTY—Ranger Inv. Co.'s No. 1 Harris, trying to shut off water 2470 feet; San Diego Oil Co.'s No. 1 Clegg, setting casing 2666 feet; Whitesides et al's No. 1 Doorkey, fishing 2845 feet.

MENARD COUNTY—Mitchell Prod. Co.'s No. 1 Grandstaff, moving in tools, 550 feet; Home Oil & Ref. Co.'s No. 1 Ellis, hauling out casing, 1225 feet; 1 Russell, rigged up; Lee Oil Co.'s No. 1 Ball, under-reaming

1475 feet; Thomas & Ludlow's No. 1 Koatman, standard rig.

PALO PINTO COUNTY—Emerald Oil Co.'s No. 1 Wheeler, drilling 1525 feet; Empire Gas & Fuel Co.'s No. 1 Gilbert, making 7,000,000 cubic feet gas and spraying oil, 3824 feet; Lone Star Gas Co.'s No. 2 Edwards, completed for 4,000,000 cubic feet gas, 1001 feet; National Producing & Ref. Co.'s No. 1 Costello, drilling 2600 feet; Prairie Oil & Gas Co.'s No. 2 Stewart, shut down 3595 feet; Vess Taylor et al's No. 1 Thomas, drilling 1410 feet; Texas & Pacific Coal & Oil Co.'s No. 1 Bratton, shut down; 1 Fairbanks, rig and tools; 1 Riebe, pulling casing; 28 Stuart, drilling 1225 feet; 114 Stuart, drilling 1220 feet; 110 Stuart, drilling 1575 feet; 124 Stuart, drilling 1025 feet; Upham et al's No. 2 Belding, making 15 barrels and preparing to shoot at 3740 feet; Wilson et al's No. 1 Layne, shut down for casing 605 feet.

PARKER COUNTY—Associated Oil Co.'s No. 1 Parker, rig; Arizona Texas Oil Co.'s No. 1 Moose, location; Burt & Griffith's No. 1 Perry, rig down, 1915 feet; Cline & Wall's No. 1 Hildreth, shut down for orders 3500 feet; East Extension Oil Co.'s No. 1 Reynolds, rig; Franklin Oil Co.'s No. 1 Cartwright, shut down for orders 3600 feet; Ranger Rock Island Oil Co.'s No. 1 Davis, shut down 3475 feet; Walnut Creek Oil Co.'s No. 1 Austin, location.

SOMERVILLE COUNTY—Thomas & Ludlow's No. 1 Eddy, rig and tools; 1 Prewit, shut down 1720 feet.

North Texas Wildcats

(Where only depths are listed, the wells are shut down.)

ARCHER-HOLLIDAY—Akma Oil Co.'s No. 1 Woodrow, location; Auber Oil Co.'s No. 1 Coleman, 880 feet; Burch-Archer Oil & Refining Co.'s No. 1 Andrews, fishing 230 feet; Brown & Simmon's No. 1 Dale, 300 feet; Checkerboard Leasing Synd's No. 1 Fore, 1910 feet; Dowe et al's No. 1 Haley, drilling 1190 feet; Lucky Jack Oil Co.'s No. 1 Dale, 665 feet; McLendon's No. 1 Skyles, 525 feet; Mankins Oil & Gas Co.'s No. 2 Mankins, rotary rig; Perkins et al's No. 1 Andrews, 720 feet; Silk et al's No. 1 Scott, 4250 feet; St. Louis-Texas Oil Co.'s No. 1 Cowan, drilling 700 feet; Sidna Burk Oil Co.'s No. 1 Coleman, 1100 feet; Staley Oil & Gas Co.'s No. 1 Browning, 950 feet; Texas Oil Corp.'s No. 1 Williams, 1100 feet; Union Oil & Prod. Co.'s No. 1 Huff, 625 feet; Von Hagen's Nos. 1 Edwards, 870 feet; 1 Gregory, 100 feet; 1 Farmer, 600 feet; 2 Coleman, rotary rig.

BAYLOR COUNTY—Bristow Ref. Co.'s No. 1 Porter, 640; Dunn et al's No. 1 Webb, drilling 1050 feet; Home Oil & Refining Co.'s Nos. 1 and 2 G. Waggoner, rigs; Kelly-Green Oil Co.'s No. 1 Portwood, drilling 1380 feet; Jackson et al's No. 1 Waggoner, drilling 1300 feet; Kansas & Gulf Oil Co.'s No. 1 Stevens, 1200 feet; Wilcox et al's No. 1 Robertson, 1690 feet; 1 Stevens, 800 feet; Wood et al's No. 1 Harrison, drilling 2725 feet.

CHILDRESS COUNTY—Plainview Oil Co.'s No. 1 Ryan, 850 feet; Duluth-Childress Oil Co.'s No. 1 Kluntz, drilling 1850 feet; Victor Oil Co.'s No. 1 Carter, drilling 900 feet; Panhandle Oil Co.'s No. 1 Robertson, 2300 feet; J. B. Watson's No. 1 Haves, 400 feet; Bell et al's No. 1 Harvey, 780 feet; Burk et al's No. 1 Rowell, drilling 1500 feet.

CLAY COUNTY—Alta Mary Oil Co.'s No. 1 Collie, Blue Grove Oil Co.'s No. 1 Nutter, drilling 500 feet; Benton Ballou et al's No. 1 Fallou, drilling 500 feet; Brown & Simon's No. 3 Dale, rig; Big Wichita Oil & Gas Co.'s No. 1 Prey, 1250 feet; Cox et al's No. 1 Lynsky, 1300 feet; Cueba Dome Oil Co.'s No. 1 Cueba spudded; Caulk et al's No. 1 Tell, rig; Clay-Tex Oil Co.'s No. 1 Campbell, 3490 feet; Cook & Milton's No. 1 Walker, drilling 2200 feet; W. H. Champion's No. 1 Hartford, standardizing 1490 feet; Damon Pet. Co.'s No. 1 Dean, 200 feet; Elk-Petrolia Oil Co.'s No. 1 Douthitt; Elias Pool Oil Co.'s No. 1 Boddy, drilling 1470 feet; Edrington Oil Co.'s No. 1 Edrington, 1970 feet; Gamble & Price's No. 1 Hansard, 1740 feet; Gurton Oil Co.'s No. 1 Kieth, spudded; Gopher Oil Co.'s No. 1 Boddy, 1675 feet; Gulf Prod. Co.'s No. 1 Gill, drilling 1500 feet; Howard Clay Oil Co.'s Nos. 1 Sanzenbaddern, rig; 1 Higggins, 520 feet; Holmes et al's No. 1 Stabfield, 2250 fet; Luna Oil Co.'s No. 1 Zillman, rig; Monarch Oil Drilling Co.'s No. 1 Huff, 1800 feet; Manhattan Oil Co.'s No. 1 Smith, 600 teet; Nippising Mining Company's Nos. 1 Edwards, 3145 feet; 3 Edwards, 400 feet; National Oil Field's No. 1 Stanfield, drilling 2300 feet; Scaling Oil Corp.'s No. 1 Scaling 600 feet; Sylvester Oil Co.'s No. 1 Kemper, 1400 feet; The Sun Co.'s No. 1 Rigsby, drilling 1400 feet; 389 Oil Co.'s No. 1 Elliott, 750 feet; Weyman Oil Co.'s No. 1 Stanford, 1800 feet; Western Drilling Co.'s No. 2 Stephenson, rig; Wichita Little Rock Oil Co.'s No. 1 Douthitt, drilling 1680 feet.

DICKENS COUNTY—McGee et al's Nos. 1 Albin, rig; 1 Davis, 340 feet.

FOARD COUNTY—Emerald Oil Co.'s No. 1 Johnson, 3125 feet; Reel-Coon Oil Co.'s No. 1 Haney, 300 feet; Midwest Exploration Co.'s No. 1 Beverly, derrick.

GARZA COUNTY—Garza Oil & Dev. Co.'s No. 1 Boren, 250 feet; Post City Oil & Dev. Co.'s No. 1 Payne, 125 feet.

HARDEMAN COUNTY—Daniels et al's No. 1 Durham, 520 feet; Frizell Oil Co.'s Nos. 1 Porterfield, 1000 feet; 1 A. J. Norton, 2100 feet; Fort Pitt Oil Co.'s No. 1 Pennington, drilling 800 feet; Hale Pet. Co.'s No. 1 Wheat, 2720 feet; Midwest Oil Co.'s Nos. 1 Mulkey, spudded; McReynolds Oil & Gas Co.'s No. 1 O'Hare, drilling 1020 feet; Nee-No-Shee Oil Co.'s No. 1 Stewart, drilling 1860 feet; Quanah-Texas Oil Co.'s No. 1 Ward, 1350 feet; H. C. Walker et al's No. 1 Gilliam, 850 feet; Wilson Bagnell Oil Co.'s No. 1 Clark, derrick.

HASKELL COUNTY—Home Oil & Ref. Co.'s No. 1 Cole, 850 feet; S. S. Kouri's Nos. 1 Ballard Ranch, 3090 feet; 1 Couch, 1300 feet; Texas Central Oil Co.'s No. 1 Quinn, rig; Wright et al's Nos. 1 Scott, 800 feet; York et al's No. 1 Colbert, drilling 1750 feet.

JACK COUNTY—Cosden & Co.'s Nos. 1 Cherryholmes, 4000 feet; 1 Stewart, 4550 feet; S. McKenzie's No. 1 Knox, 2800 feet; Rosser Drilling Co.'s No. 1 Cherryholmes, 2300 feet; Ray Oil Co.'s No. 1 Christian, rig down; Bennett Synd.'s No. 1 Knox, 570 feet.

KENT COUNTY—McFain et al's No. 1 Brown, 1400 feet; J. F. McKay's No. 1 Hale, location.

KNOX COUNTY—DeLeon Pet. Co.'s No. 1 Ward Ranch, 550 feet; Home Oil & Ref. Co.'s Nos. 1, 2 and 3 Waggoner, locations; Knox Oil Co.'s No. 1 McGraw, 2500 feet.

MONTAGUE COUNTY—Frank V. Wright's No. 1 Monroe, 3245 feet.

PETROLLA-DISTRICT—Ashland Oil Co.'s No. 1 Johnson, cable tools; Lone Star Gas Company's Nos. 5 Stein, drilling 1525 feet; Burkburnett Petrolia Synd.'s Nos. 2 Kempner, 1770 feet; 3 Kempner, 25 feet; Petrolia Musselman Oil Co.'s No. 1 Kempner, drilling 2240 feet; Texhoma Oil & Ref. Co.'s No. 1 Scheldberg, drilling 950 feet; York Prod. Co.'s No. 1 Best, rig down.

STONEWALL COUNTY—Republic Oil & Gas Co.'s No. 1 White, 200 feet; Rosenthal et al's No. 1 Dendensing, drilling 100 feet; United Worker's Oil Co.'s No. 1 Baldwin, rig.

THROCKMORTON COUNTY—Kelly-Green Oil Co.'s No. 1 Davis, fishing 2200 feet; O'Shay Oil Co.'s No. 1 Woods, location; Prairie Oil & Gas Co.'s No. 1 Woods, 3500 feet; The Sun Co.'s No. 1 Matthews, cleaning out 1720 feet; 1 Reynolds, rigging up; Ratigan et al's Nos. 1 and 2 Woods, locations; Texas Holding Co.'s No. 1 Edsall, rig.

WICHITA DISTRICT—Cauble Oil Co.'s No. 1 Avis, 1900 feet and 1 Burnett, 2420 feet; East Wichita Oil Co.'s No. 1 Honaker, 1975 feet; National Oil Drilling Co.'s No. 1 Lastinglager, 1540 feet; Jetter Oil Co.'s Nos. 1 Cooper, 1560 feet; 2 Cooper, derrick; Texas Chief Oil Co.'s No. 1 Stephens, abandoned 2050 feet.

WILBARGER COUNTY—American Eagle Oil Co.'s No. 1 Kelly, drilling 2100 feet; Apex Oil Co.'s No. 1 Ferguson, rig down; Aetna Oil Co.'s No. 1 Goss, 1810 feet; Barlow et al's No. 1 Pyle, rotary rig; Byers Farm Oil Co.'s No. 1 Byers, 2370 feet; Big Waggoner Oil Co.'s No. 1 Waggoner, 1600 feet; Border States Oil Co.'s No. 1 Boyd, shut down; Brewer et al's No. 1 Wharton, drilling 1980 feet; Burk Waggoner Oil Co.'s No. 1 Castleberry, 2180 feet; Churchill Oil Co.'s No. 1 Watts, derrick; Crescent Oil Co.'s No. 1 Starr, derrick; Eldorado Oil & Gas Co.'s No. 1 Waggoner, derrick; Eutopia Oil & Ref. Co.'s No. 1 Ayers, derrick; Frost Pitts & Staley's No. 1 Vaughn, standardizing 1850 feet; Farmers Valley Oil Co.'s No. 1 Wells, drilling 1800 feet; Flowers et al's No. 1 Wharton, testing 1770 feet; Gem Oil Co.'s No. 1 Wharton; Green, Chenshaw & Smith's No. 1 Castleberry; Guyer Thrisler Oil Co.'s No. 1 Buyer, 2500 feet; Harrold Texas Oil Co.'s No. 1 Cochran, drilling 1320 feet; Home Oil & Ref. Co.'s Nos. 1 G. Waggoner, 1670 feet; 1 P. Wagoner, 1300 feet; 3 and 4 G. Waggoner, locations; 1 Smith, derrick; and 2 P. Waggoner, derrick; Guy Waggoner's No. 1 Guy Waggoner; Hicks et al's No. 1 Vaughn, derrick; Kansas City Oil Co.'s No. 1 King, derrick; Noble Oil Co.'s No. 1 Thompson, drilling 1600 feet; Mitchell Farm Oil Co.'s No. 1 Mitchell, 1200 feet; Magic City Oil Co.'s No. 1 Wharton, rig; McCormick et al's No. 1 Smith, 1330 feet; Magnolia Pet. Co.'s No. 1 Green, drilling 1870 feet; Joe Mayfield's No. 1 Fisk, derrick; Neal & Hamilton's No. 1 Neal, 2800 feet; Oaks, McAdoo & Schafer's No. 1 Wharton, Penn-Burk Oil Co.'s No. 1 Hert, 1330 feet; Royal Flush Oil Co.'s No. 1 Randall, location; Radio Oil Co.'s No. 1 Wharton, rigged up; Read Ranch Oil Co.'s Nos. 1 Read, 700 feet; 1 Wilkinson, rig; 1 Hawley, drilling 1000 feet; Sigler Oil Co.'s Nos. 1 Wharton, swabbing 100 barrels; 2 Wharton, setting casing 2020 feet; 3 Wharton, derrick; S. R. Oil

GEOLOGISTS

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Central Trust Building
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Formerly Assistant Geologist, Bureau of Economic Geology, Austin, Texas

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CONSULTING GEOLOGIST
Reports — Appraisals — Management
Texas and Louisiana Oil Properties
504 Stewart Bldg. — Houston, Texas

DABNEY E. PETTY
Petroleum Geologist
Examinations, Appraisals and Management of Oil Properties
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Co.'s No. 1 Hancock, 1920 feet; Staley & Green's No. 1 Zipperle, derrick; Star State Oil Co.'s No. 1 Waggoner, 300 feet; Texas Wyoming Oil Co.'s No. 1 Williams, drilling 2300 feet; Vassey-Odell Oil Co.'s No. 1 Vassey, drilling 1670 feet; Vernon Winner Oil Co.'s No. 1 Milnes, derrick; V. O. D. Oil Co.'s No. 1 Lowe, drilling 2400 feet; Vernon Checkerboard Oil Co.'s No. 1 Turkett, 500 feet; Wilbarger Haley Oil Co.'s No. 1 King, drilling 400 feet; Waggoner Colony Oil Co.'s No. 1 Taylor, drilling 900 feet.

WISE COUNTY—Bridgeport Oil & Gas Co.'s No. 1 Dethloff, 1000 feet; Alvord Oil & Gas Co.'s No. 1 Parrish, 320 feet; Burk Waggoner Oil Co.'s No. 1 Gilbert, rig; Carey Oil Co.'s No. 1 Whatley, drilling 1250 feet; Decatur Oil & Gas Co.'s No. 1 Sullivan, Hale & Tood's No. 1 Hoyle, 1000 feet; Keystone Pet. Co.'s No. 1 Askew, drilling 1350 feet; Lubbock Bridgeport Dev. Co.'s No. 1 Romminger, drilling 2650 feet; Wise-Comanche-Burk Oil Co.'s No. 1 Spann, 1500 feet.

YOUNG COUNTY—Arkansas Oil & Gas Co.'s No. 1 Jeffries, 3000 feet; Cosden Oil Co.'s No. 1 Timmons, fishing 4000 feet; Colcord et al's No. 2 Scott, drilling 1600 feet; Dallas-Young Oil Co.'s No. 1 Stewart, Edelman et al's No. 1 River bed, rig down; Graham Oil Synd.'s No. 1 Graham, 350 feet; Humble Oil & Ref. Co.'s No. 1 Marshall; Lamb-McGraw Oil Corp.'s No. 1 Benson, drilling 1400 feet; Merrill Oil & Gas Co.'s No. 1 Hunt, drilling 3500 feet; Moore et al's No. 1 Keene, drilling 3900 feet; Manhattan Oil Co.'s No. 1 Johnson, North American Ref Co.'s No. 1 Donnell, 2880 feet; Panhandle Ref. Co.'s Nos. 1 McClusky, drilling 2225 feet; 1 Scott, rig; Roxand Pet. Co.'s Nos. 1 Ford, drilling 750 feet; 1 Goode, fishing 4100 feet; 1-A Goode, spudding in; 1 Payne, rigging up; Staley et al's No. 1 Donnell, 2730 feet; Southwestern Miami Oil & Gas Co.'s No. 1 McKenn, 2000 feet; Snowden et al's No. 1 Graham, 3200 feet; The Sun Co.'s Nos. 1 Steinland, 3050 feet; 2 Donnell, drilling 200 feet; Texas Holding Co.'s No. 1 Ernest, 770 feet.

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Texas Panhandle Wildcats

ARMSTRONG COUNTY—Armstrong Oil Co.'s No. 1 Bagdell, location; Goodnight Oil Co.'s No. 1 Goodnight, drilling 2450 feet.

CARSON COUNTY—Capital Pet. Co.'s No. 1 Purvine, 1530 feet; Humble Oil & Refining Co.'s No. 1 Burk Burnett, drilling 2275 feet; Gulf Prod. Co.'s No. 1 Burkburnett, under-reaming 1840 feet.

CASTRO COUNTY—Gulf Panhandle Oil Co.'s No. 1 Lambert, derrick; Seven States Oil Co.'s No. 1 Wilhelm, 50 feet; 1 Laird, material on ground.

COLLINSWORTH COUNTY—Buster Barnes Oil Co.'s Nos. 1 Adkins, derrick; 1 Shields, fishing 1410 feet; United Southern Oil Co.'s Nos. 1 Heard, drilling 700 feet; 1 McDowell, 110 feet.

COTTLE COUNTY—L. Y. Oil Co.'s No. 1 Sowers, derrick; Petroleum Producers Co.'s No. 1 White, 50 feet.

DALLAM COUNTY—Dalhart Oil Co.'s No. 1 James, drilling 850 feet; R. E. Taylor's Nos. 1 James, location; 1 Merriwether, 430 feet.

DEAF SMITH COUNTY—Hereford Oil & Gas Co.'s No. 1 Nidergall, 700 feet; Knox Oil Co.'s No. 1 Landergin, under-reaming 500 feet.

DONLEY COUNTY—Atlanta Oil & Ref. Co.'s Nos. 1 Grogan, 420 feet; 2 Grogan, material on ground; Leila Lake Oil Co.'s No. 1 Inman, drilling 3500 feet; Don Lea Oil Co.'s No. 1 Gurner, 120 feet; Giant Oil Co.'s No. 1 Sexour, waiting for tools; Crane New York Oil Co.'s No. 1 Bugbee, 230 feet; Mutual Products Co.'s No. 1 Crist, 50 feet; McCallum Creek Oil Co.'s No. 1 Smith, location; Buck Creek Oil Co.'s No. 1 Moreman, 1400 feet; Schow Bros.' No. 1 Harrington, derrick.

HALL COUNTY—Texas Virginia Oil Co.'s No. 1 Letts, 800 feet; Coble Pet. Co.'s No. 1 Hollowfield, 3200 feet; Crayola Oil Co.'s No. 1 Fuston, 400 feet; Estelline-Red River Oil Co.'s No. 1 Wright, moving in tools; Home Peoples Oil Co.'s No. 1 Burnett, 1500 feet.

HARTLEY COUNTY—Prairie Oil & Gas Co.'s Nos. 1 Lyman, 1400 feet; and 1 C. S. & S., drilling 1200 feet.

HEMPHILL COUNTY—Fort Worth Canadian Oil Co.'s No. 1 Schaller, drilling 2500 feet; V. C. McInnis' No. 1 Hopkins, fishing 450 feet.

HUTCHISON COUNTY — Coble-Haywood Synd.'s No. 1 Coble, drilling 400 feet; Okla. State Dev. Co.'s No. 1 Smith, 400 feet.

LIPSCOMB COUNTY—Hamilton Oil Co.'s No. 1 Gray, drilling 2400 feet.

MOORE COUNTY—Master Oil Co.'s No. 1 Masterson, fishing 1720 feet; Shamrock Oil Co.'s No. 1 Spead, 640 feet; Panhandle Ref. Co.'s No. 1 Thompson, rigging up.

MOTLEY COUNTY — Matador Pet. Co.'s No. 1 Echols, drilling 1800 feet; Motley County Oil Co.'s No. 1 Kingry, rigging up.

OCHILTREE COUNTY—Casa Oil Co.'s No. 1 Coffee, 200 feet.

OLDHAM COUNTY — Benedum & Trees' Nos. 1 Matador, fishing 750 feet; 2 Matador, drilling 600 feet; 1 Shelton, 1900 feet; Issues Oil Co.'s No. 1 Matador, drilling 350 feet; Gordon Trust Co.'s No. 1 Herring, drilling 1300 feet; Humble Oil & Refining Co.'s No. 1 Singelton, drilling 450 feet.

PALMER COUNTY—Prairie Oil & Gas Co.'s No. 1 Schramm, 1500 feet.

POTTER COUNTY—Amarillo Oil Co.'s Nos. 2 Bivens, 600 feet; 5 Masterson, 2220 feet; Amarillo Pet. Co.'s No. 1 Bivens, 3000 feet; Ranch Creek Oil Co.'s No. 1 Masterson, 2610 feet; Haines Oil Co.'s No. 1 Trigg, 3900 feet; Haines & McSpadden's No. 1 Masterson, fishing 700 feet; Seven States Oil Co.'s No. 1 Holbrook, drilling 1250 feet; Bonita Creek Oil Co.'s No. 1 Bivens, derrick; Miller Oil & Dev. Co.'s No. 1 Tanner, fishing 1470 feet; Emerald Oil Co.'s No. 1 Masterson, drilling 2050 feet; White & Park's No. 1 Masterson, drilling 1525 feet.

ROBERTS COUNTY—Stoner et al's Nos. 1 Whitman, 100 feet; 1 King, 60 feet.

RANDALL COUNTY—Palo Duro Oil Co.'s No. 1 Arnold, 2800 feet; Randall Oil & Dev. Co.'s No. 1 Schramm, derrick down.

SWISHER COUNTY—Happy Oil Co.'s No. 1 Whitman, 630 feet; Seven States Oil Co.'s No. 1 Strange, 25 feet.

WHEELER COUNTY—Texas & Northwestern Pet. Co.'s No. 1 Martin, 300 feet.

Coastal Wildcats

BRAZOS COUNTY—Big Ben Oil Co.'s No. 1 Stewart near Navasota standing at 1900 feet; Wakefield et al's No. 1 Tabor has started drilling.

CAMERON COUNTY—Grande and Gulf Oil Corp.'s No. 1 Champion, 20 miles South of Brownsville is fishing at 2000 feet.

BROOKS COUNTY—Cambrian Production Co.'s No. 1 Maupin, near Falfurrias is drilling at 2375 feet.

FORT BEND COUNTY—Southland Oil and Refining Co.'s No. 1 Huntington near Fulshear is drilling around 3300 feet.

POLK COUNTY—Seven Oaks Oil Co.'s No. 1 Mason is standing at 1864 feet.

TRAVIS COUNTY—Dr. P. S. Griffith's No. 1 Sunset Ranch is fishing at 985 feet.

GRIMES COUNTY—Texas Oil, Gas and Mineral Products Co.'s No. 1 Freund near Carlos is going over four with six inch at 2415 feet; Crown Petroleum Co.'s No. 3 Crawford near Singleton is standing at 2515 feet.

COLORADO COUNTY—Ellinger-Gonzales Oil Co.'s No. 1 Blengmyer is drilling around 550 feet.

ANGELINA COUNTY—Rockland Neches Oil Co.'s No. 1 Davis is down around 620 feet; Head and Mean's No. 4 Kimmey is a derrick.

GALVESTON COUNTY—The Sun Co.'s No. 3 Cade on High Island is a location.

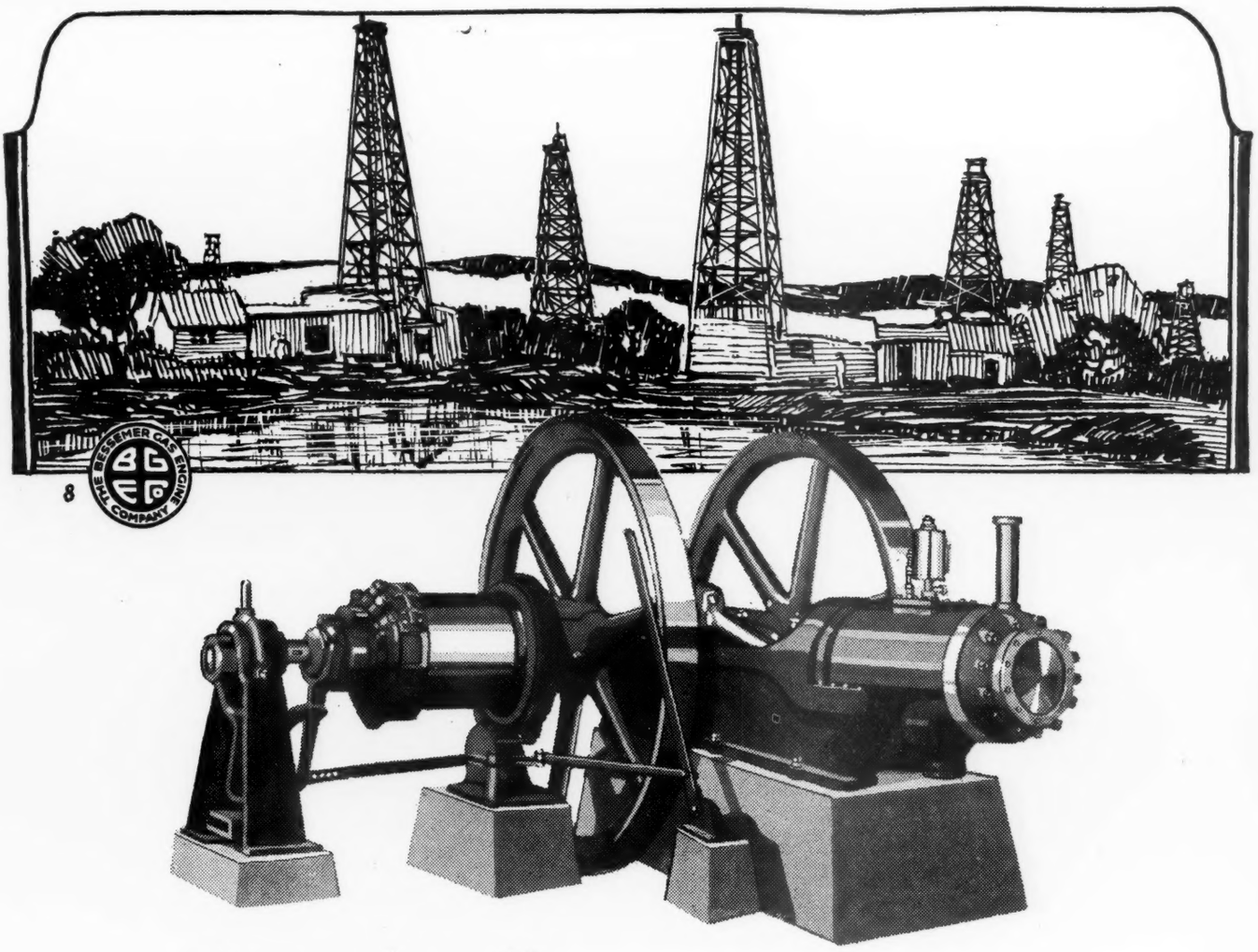
VICTORIA COUNTY—Guadalupe Valley Oil Co.'s No. 1 Conti is drilling around 2135 feet.

ORANGE COUNTY—Orange Oil Co.'s No. 1 Le Fleurre is waiting on strainer at 3600 feet; Mutual Oil Co.'s No. 1 Stark is a derrick; Marysville, La. Interest's No. 1 Mary Williams is drilling around 250 feet; Gulf Production Co.'s No. 1 B. Kishi-Lang is a derrick; Humble Oil and Refining Co.'s No. 1 Miller Link is drilling around 1700 feet; 1 Miller Link is drilling around 2300 feet; Told's Oil and Drilling Co.'s No. 1 Winfrey is rigging up; Cross Streams Oil and Development Co.'s No. 1 Chambers is rigging up.

BRAZORIA COUNTY—Freeport Sulphur No. 6 Tolar and Dannenbaum near Stratton ridge is drilling around 1360 feet; 7 Tolar and Dannenbaum is a location; Texas Co.'s No. 2 Cochran and McClure at Stratton ridge is rigging up; Humble Oil and Refining Co.'s No. 1 B. Seaburn has been abandoned at 3635 feet; 7 Seaburn is drilling at 3500 feet and 2 Brock is drilling at 1960 feet; The State of Texas No. 1 Clements State Farm is waiting on pipe at 3700 feet; Isabella Oil Co.'s No. 1 Warner is drilling at 500 feet; Alberta Oil Co.'s No. 1 Action is standing at 2050 feet; Brazoria Development Co.'s No. 1 Strobel is standing at 3000 feet and 2 Strobel is a location; Angelton Co-operative Oil Co.'s No. 1 is standing at 3300 feet; William Wakefield has taken over the lease of the Grant Oil Subdivision Co.'s No. 1 Newby, near Alvin, which has been standing around 2160 feet, and will complete the well; Etta Mooney Oil Co.'s No. 1 Brumbitt near Chenango is drilling around 2250 feet.

HARRIS COUNTY—Texas Exploration Co.'s No. 1 Dooley is drilling around 500 feet; 3 Stettegast at Pierce Junction is at 1760 feet; 1 Settegast Heirs is drilling around 600 feet; 1 Ritter is drilling around 600 feet; 2 Warren at Hockley is around 2150 feet; 3 Warren is at 900 feet; The Gulf Production Co.'s No. 11 Warren at Hockley is around 1975 feet; 1 Taylor Farm at Pierce Junction is drilling around 950 feet; Ranger Comanche Oil Co.'s No. 1 Bodman, near Humble, is reaming at 3180 feet; W. H. Drummer et al's No. 3 Settegast at Pierce Junction is shut down at 1400 feet; Deep Blue Ridge Oil Co.'s No. 1 Kirby at Pierce Junction is drilling around 1300 feet; Willow Creek Oil Co.'s No. 1 Mooney Ranch, near Louetta is shut down; J. D. Hale Oil Co.'s No. 1 Wilkerson near Fairbanks is standing; Green's Bayou Production Co.'s No. 1 Myers on Turtle Back Mound is fishing at 1875 feet; Jacksonville-Florida Oil Co.'s No. 1 Hunt near Goose Creek is standing at 2100 feet; Cedar Bayou Production Co.'s No. 1 Wilson is rigging up; Iowa-Texas Oil Co.'s Hoskins near Goose Creek is rigging up; Kelly Oil and Gas Co.'s No. 1 Connors at Cross Timbers is standing at 2600 feet; R. E. Brooks Jr.'s No. 1 Quennson, near Houston Heights, is losing returns at 1280 feet; Gore et al's No. 2 Hargraves is down at 2800 feet; No. 1 Shultz is shut down; Texas Oil Producer's No. 1 Stewart near Oil Mound is standing around 3500 feet.

JEFFERSON COUNTY—Jefferson County Develop-



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BESSEMER
OIL FIELD EQUIPMENT

ment Co.'s No. 1 Mayumi, near Fanette is shut down at 2325 feet.

AUSTIN COUNTY—Aetna Petroleum Co.'s No. 1 Theilman is standing at 65 feet.

MONTGOMERY COUNTY—Conroe Oil & Gas Co.'s No. 1 Henry Juerguson is a derrick; Illinois-Texas Oil Co.'s No. 3 Smith is waiting on pipe at 1100 feet.

JACKSON COUNTY—The Texas Co.'s Ward Ranch has been abandoned at 3011 feet; Vanderbilt Petroleum Co.'s No. 1 Koop, near Vanderbilt, is standing at 1700 feet; 2 Koop is waiting on material at 2000 feet; Coastline Oil Co.'s No. 1 Calhoun near Edna is drilling around 2050 feet; McDonald et al's No. 1 Fuqua is drilling around 250 feet; Drushell et al's No. 1 Drushell is rigging up.

GALVESTON COUNTY—The Sun Co.'s No. 3 Cade on High Island is a location.

KLEBERG COUNTY—The Kleberg Oil and Gas Co.'s No. 2 Rosse near Kingsville has resumed drilling around 3600 feet after being shut down waiting a decision of the board of directors whether to drill deeper or make another test at 3014 feet; The Cap Rock Oil Association's No. 1 Rincon is rigged up waiting on casing.

LIBERTY COUNTY—E. F. Simms et al's No. 2 Pruitt, northwest of Dayton, which was placed on the pump is having considerable trouble with rods parting because of sand coming in; 4 Pruitt is rigging up; 5 Pruitt is drilling around 1300 feet; The Texas Oil Gas & Mineral Products Co.'s No. 1 Toga, northwest of Dayton, is drilling around 2145 feet; The Texas Co.'s No. 1 Schendler, northwest of Dayton, is drilling around 2720 feet; The Empire Gas and Fuel Co.'s No. 3 Welder south of Dayton is drilling around 2510 feet; No. 1 Wilson is drilling around 3190 feet and No. 3 Jackson is drilling around 1120 feet; The Chance to Lose Oil Co.'s No. 1 Ferguson is drilling around 2500 feet; The Humble Oil and Refining Co.'s No. 3 Hume at Davis Hill is drilling around 2020 feet; 13 McCardle is drilling around 2100 feet; 2 J. C. League is drilling around 2270 feet; Liberty County Development Co.'s No. 1 Gilbert near Hull is drilling around 2000 feet.

SAN JACINTO COUNTY—Wakefield's No. 1 McMurray is a derrick.

San Antonio District Wildcats

DUVAL COUNTY—National Petroleum Co.'s No. 2 Schallert is down around 250 feet; Empire Gas and Fuel Co.'s No. 1 Beecher is shut down; E. F. Simms and Co.'s No. 1 Singer is a location; Mar-Tex Oil Co.'s No. 1 Ridder is standing at 3585 feet; Gray Ridge Oil Co.'s No. 1 Gray is rigging up.

ZAPATA COUNTY—The Texas Co.'s No. 1 Martinez is shut down; Mirando Oil Co.'s No. 1 Hinnant is shut down.

CALDWELL COUNTY—Barker et al's No. 1 Pharr is a location; Texas Southern Oil and Lease Syndicate's No. 1 Jahns is down around 800 feet; The Texas Drilling Syndicate's No. 1 Thieman is drilling around 1550 feet; Oil Issues Co.'s No. 1 Manford is drilling around 1550 feet; Oil Issues Co.'s No. 1 Manford is drilling around 1900 feet; 1 Zobroskie is drilling around 1200 feet.

WILLIAMSON COUNTY—Round Rock Oil Co.'s No. 1 Walsh is down around 1450 feet.

Northeast Texas Wildcats

EAST TEXAS WILDCAT COMPLETIONS

In Lamar County, The Texas Crude Oil Co.'s No. 1 Justice was abandoned at 1090 feet after the derrick had been blown down.

In Panola County, The Bethany Oil & Gas Co.'s No. 202 A. Jernigan tested 3,000,000 cubic feet of gas and will be drilled deeper. The depth was 1065 feet. The Texas Co.'s No. 1 T. C. Adams was abandoned at 2770 feet on account of a blow out.

In Shelby County, The Texas Co.'s No. 11 Pickering was abandoned at 3150 feet on account of a bad fishing job.

In Shelby County, The Texas Company's No. 11 Pickering, located 2500 feet north and 2200 feet west of the southeast corner of the Aaron Castlebury headright survey, has pulled casing and is abandoned at 3100 feet.

BOWIE COUNTY—Dolby Springs Oil Co.'s No. 1 Bowie County School Land, lost hole, moving over, 700 feet; Postal Clerks Oil & Gas Co.'s No. 1 Fee, drilling 2245 feet; Tex-Port Oil & Gas Co.'s No. 1 Gilly, arranging to test, 3173 feet; 1 Golson, shut down 200 feet.

CASS COUNTY—Baystate Oil & Gas Co.'s No. 1 Williams, derrick down; Carlson Price Pet. Co.'s No. 2 Spears, shut down 1584 feet; Gladys Belle Oil Co.'s No. 1 Lister, derrick.

FANNIN COUNTY—Telephone Oil & Gas Co.'s No. 1 Moore, fishing 1700 feet.

GREGG COUNTY—General Pet. Co.'s No. 1 Simmons, shut down 3300 feet.

HARRISON COUNTY—Amarillo Caddo Oil Co.'s No. 1 Boyd, drilling 500 feet; Bethany Oil & Gas Co.'s No. 203 Gibson B, set 8 inch 1032 feet; Bruner Petroleum Co.'s No. 1 Lowery, set 6-inch 2572 feet; Gulf Prod. Co.'s Nos. 1 Banks Boogery, fishing, 1227 feet; A-1 Barlow, arranging to shoot 2419 feet; 1 Smith, derrick; Sinclair Oil Co.'s No. 1 Guynn, drilling 1900 feet; Texas-Caddo Oil & Gas Co.'s No. 1 Currie, fishing 2212 feet; Texland Oil Co.'s No. 1 State, drilling 1832 feet.

HOPKINS COUNTY—Gatex Oil Co.'s No. 1 Davis, shut down 300 feet; Nunn & McMann's No. 1 Smith, derrick; G. W. Stough's No. 1 Smith, drilling 741 feet; Southwestern Oil Fields Co.'s No. 1 Hardaway, derrick.

LAMAR COUNTY—Auds Creek Oil Co.'s No. 1 Hampton, drilling 1948 feet; Blossom Oil & Dev. Co.'s No. 1 Lenoir, shut down 1140 feet; Lawrence Drilling Co.'s No. 1 Womack, reaming to bottom, 1221 feet; Maurice Burton, Trustee's No. 1 Berry, fishing 1517 feet; North Mid-Texas Oil & Gas Ass'n's No. 1 Barr, shut down; Tri Sands Oil & Dev. Co.'s No. 1 Ford, shut down 175 feet.

MARION COUNTY—Dempsey Bros. No. 1 Taylor, drilling 1626 feet; Hewitt Caddo Mineral & Realty Co.'s No. 1 Crawford, shut down 2330 feet; Hollister Oil Co.'s No. 1 Loomis, derrick; Martel Oil Co.'s No. 1 Chew, shut down 2600 feet.

NACOGDOCHER COUNTY—Queen et al's No. 1 Garrett, rigging to drill.

PANOLA COUNTY—Bethany Oil & Gas Co.'s No. 202, A. A. Jernigan, drilling deeper 1093 feet; Bethany Oil & Gas Co.'s No. 201 Johnson, drilling 2023 feet; Clarksdale Oil & Gas Co.'s No. 1 Arnold, rigging to drill; 1 Douglas, drilling 760 feet; L Louis Werner, reaming to reset 6 inch 2675 feet; Hope Oil Co.'s No. 3 Louis Werner, drilling 400 feet; Mutual Oil Co.'s No. 1 Lawson, location; Magnolia Pet. Co.'s No. 1 Steel, rigging to drill; Lester Smith's No. 1 Poole, drilling 1875 feet; The Texas Co.'s Nos. 1 Adams, shut down, 2769 fet; B-1 Adams, drilling 300 feet; A-2 Adams, derrick; Transcontinental Oil & Gas Co.'s No. 1 Lawrence, sidetracking 3000 feet; Texas Co.'s No. 9 Waterman Lumber Co. rigging to drill.

RED RIVER COUNTY—Avery Pet. Co.'s No. 2 Bearden, preparing to test 1145 feet; Ranger Valley Oil Co.'s No. 1 Puckett, derick; Toronto-Texas Oil & Gas Co.'s No. 1 Coleman, fishing 1097 feet.

RUSK COUNTY—Big State Oil Co.'s No. 1 Wright, shut down 3551 feet; General Pet. Co.'s No. 1 Baird, drilling 3389 feet; Sinclair Oil & Gas Co.'s No. 1 Bosworth, drilling 2025 feet; Pure Oil Co., location.

SHELBY COUNTY—Cathart-Texas Oil Co.'s No. 1 Holt, derrick; East Texas Pet. Co.'s No. 1 Fee, fishing 1658 feet; Eysenbach et al's No. 1 Brown, rigging to drill; National Oil Co.'s No. 1 Adams, drilling 2620 feet; Polly Oil & Gas Ass'n's No. 1 Jones, derrick; The Texas Co.'s Nos. 1 Hunt, drilling 100 feet; 19 Pickering, setting 4½ inch 3198 feet.

SMITH COUNTY—Brooks Saline Oil & Gas Co.'s No. 2 Woldert, fishing 850 feet; Lindale Oil Co.'s No. 1 Whitter, fishing 2622 feet.

TITUS COUNTY—Stinking Creek Oil & Gas Co.'s No. 1 Davis, drilling 900 feet; Wester et al's No. 1 Scott, derrick.

VAN ZANDT COUNTY—Van Zandt Oil & Gas Co.'s No. 1 Jones, shut down 350 feet.

WOOD COUNTY—Simpson Oil Co.'s No. 1 Owens, drilling 2635 feet; B. W. Williams et al's Nos. 1 Thompson, rigging to drill; 1 Adrian, derrick; Carter et al's No. 1 Clark, drilling 775 feet.

Arkansas Wildcats

ARKANSAS WILD CAT COMPLETIONS

In LaFayette County, Keen & Woolf's No. 1 Red River Lumber Co., 21-19-24, was abandoned at 3010 feet.

COLUMBIA COUNTY—Morris S. Allen's No. 1 Pickler, 19-19-22, drilling 397 feet; Oklahoma Pet. Co.'s Nos. 1 Walker, 17-19-21, shut down 1400 feet; 1 Waller, 6-19-20, shut down 1295 feet; South Arkansas Oil & Gas Co.'s No. 1 Crisp, 36-17-20, drilling 1325 feet; Texolean Oil Co.'s No. 1 Lockett, 2-17-19, drilling 1828 feet.

LAFAYETTE COUNTY—Dixie Oil Co.'s No. 1 Miles, 2-19-26, set 4½ inch 3221 feet; Jack Doyle Oil Co.'s No. Murphy, 22-19-25, drilling 2666 feet; S. S. Hunter's No. 1 Rennick, 36-16-25, derrick.

MILLER COUNTY—Farmes Oil & Ref. Co.'s No. 1 Ramsey, 24-17-27, derrick.

OUACHITA COUNTY—Humphrey Oil Co.'s No. 1 Boyd, 23-12-19, drilling 2925 feet; S. S. Hunter's No. 1 Lester & Halton, 13-15-19, set 6-inch 2121 feet; Strayhan & Crawford's No. 1 Garnett, 15-12-18, shut down 3165 feet.

UNION COUNTY—Roundarant et al's No. 1 Stegall, 3-18-12, derrick; Congress Oil Co.'s No. 1 Swilley, 8-19-15, shut down 1300 feet; Mattix & Hinton's No. 1 Armstrong, 31-17-15, drilling 300 feet; Quaker City Pet. Co.'s No. 1 Mittendorff, 15-17-15, derrick; Sims et al's No. 1 Proctor, 9-16-16, derrick; Slamm et al's No. 1 Morgan, 15-17-15, derrick; Union Pet. Co.'s No. 1 Helm, 9-19-16, derrick; Walker et al's No. 1 Fourney, 5-17-17, reaming to bottom 2262 feet; Trinity Pet. Co.'s No. 1 Realty Colonization Co. 21-18-15, drilling 3092 feet.

North Louisiana Wildcats

NORTH LOUISIANA COMPLETIONS

In Bossier Parish the Standard Oil Company's No. 2 Raines, 21-16-11, was completed at 2460 feet and is making about 4,000,000 cubic feet of gas.

In Calcasieu Parish the Gulf Refining Co.'s No. 8-A Higgins, 28-9-11, was abandoned at 3360 feet.

In Lincoln Parish the Homa Okla Oil Co.'s No. 1 Lewis, 21-19-4, was abandoned at 2990 feet.

In Ouachita Parish, the Ouachita Oil Co.'s No. 4 Smith, 29-20-4E, was completed at 2120 feet and is making 10,500,000 cubic feet of gas.

WELLS DRILLING

ALLEN PARISH—Tex-Lukan Oil & Gas Co.'s No. L Brown & Cathey, 11-3-3, shut down 1320 feet.

ARCADIA PARISH—Coasted Oil & Fuel Co.'s No. 83 Fee, drilling 1300 feet; Gulf Ref. Co.'s Nos. 30 and 31 Clement, derricks.

BEAUREGARD PARISH—A. C. Douchey's No. 1 Columbia Land & Timber Co., 17-6-13, location; Perkins Oil Co.'s No. 1 Perlins, 34-7-10, shut down 2400 feet.

BIENVILLE PARISH—Arcadia Oil Co.'s No. 1 Anderson, 29-18-4, shut down 2290 feet; 1 Pentecost, 21-18-5, derrick; Cotton Oil Co.'s No. 1 Jones, 9-17-6, drilling 600 feet; Congress Oil Co.'s No. 1 Davis, 31-17-5, set 8 inch 1510 feet; Walter Dickinson et al's No. 1 Fuller, 6-16-7, shut down 1890 feet; Early Oil Co.'s Nos. 1 Baker, 9-17-7, derrick; 1 Thurman, 35-18-7, rigged to drill; Harmony Oil Co.'s No. 1 Hodges Lumber Co., 16-15-4, shut down 1440 feet; Humble Oil & Ref. Co.'s No. 1 Poole, 9-16-6, bailing 8 inch 2070 feet; Louisiana Oil Ref. Corp.'s No. 1 Huckaby, 27-15-8, set 8 inch 1390 feet; L. E. & J. M. Lummas' No. 2 McQuire, 19-18-5, bailing 8 inch 1160 feet; Phillips Pet. Co.'s No. 1 Briceland Lumber Co., 2-17-7, shut down 1715 feet; Ringgold Oil & Gas Co.'s No. 1 Mosley, 5-1-59, shut down 3040 feet; A. C. Scott's No. 1 Evans, 32-16-8, shut down 1880 feet; Superior Oil & Gas Co.'s No. 1 Jordan, 30-16-5, shut down 2250 feet; Venture Oil Co.'s No. 1 Lawhorn, 15-16-8, set 8 inch 1040 feet.

BOSSIER PARISH—Arkansas Natural Gas Co.'s No. 124 Bush, rigged to drill, 127 Giddens, 26-16-11, locations; Bossieau et al's Nos. L. Fullilove, 21-19-13 pumping some oil 2600 feet; 2 Fullilove, drilling 2500 feet; Gulf Refining Co.'s Nos. 8 Hodges, 24-16-12, arranging to pump 1550 feet; 3 J. J. Leviston, 1-16-12, drilling 500 feet; Homer Union Oil Co.'s No. 1 Scott, 35-19-13, derrick; W. C. Kendall et al's No. 1 Prince, 32-17-12, set 6 inch 2590 feet; Louisiana Gas & Fuel Co.'s Nos. 2 Booth, 18-16-11, set 6 inch 780 feet; 3 Fonville & Bellieter, 15-16-11, drilling 300 feet; 1 Woodson, 10-16-11, drilling 1200 feet; Palvisor Pet. Co.'s No. 1 Ford, 9-22-13, swabbing 2770 feet; Bill Rowe Oil Co.'s No. 1 Brown & McCollegge, 26-19-13, set 6 inch 2580 feet; Rocky Mount Oil Co.'s No. 1 Xavier, 17-21-12, derrick; R. O. Roy's No. 1 Jamison, 14-19-12, drilling 2625 feet; Sinclair Oil Co.'s No. 1 Washington, 36-18-12, drilling 2890 feet; Standard Oil Co.'s Nos. 3 J. T. McDade, 31-16-11, rigged to drill; 3 A. F. McDade, 18-16-11, rigged to drill.

CALDWELL PARISH—White Eagle Pet. Co.'s No. 1 Burroughs, 26-12-5E, moving in rig.

CAMERON PARISH—Carson & Wood's No. 1 Curran, 18-15-5, drilling 2350 feet.

CALCASIEU PARISH—Avery et al's No. 1 Hunter, 21-9-11, derrick; Edgerly Pet. Co.'s Nos. 1 Drew, 29-9-11, shut down 2750 feet; 3 Wilson, 28-9-11, drilling 1550 feet; Gulf Refining Co.'s Nos. 52 B. N. Gray, 33-10-12, drilling 1400 feet; 33 Bright Penn, 28-9-11, 1500 feet; 20 Star Vincent, 34-10-12, testing 2180 feet; Bays More Oil Co.'s No. L Ogea, 27-10-9, shut down 2190 feet; Rescue Oil Co.'s No. 7 Gray, 4-10-12, setting screen 2250 feet; Rescue Oil Co.'s No. 7 Gray, 4-10-12, setting screen 2250 feet; Highmount Oil Co.'s No. 1 Roderick, 28-9-12, drilling 2400 feet; Dr. Monroe & Co.'s

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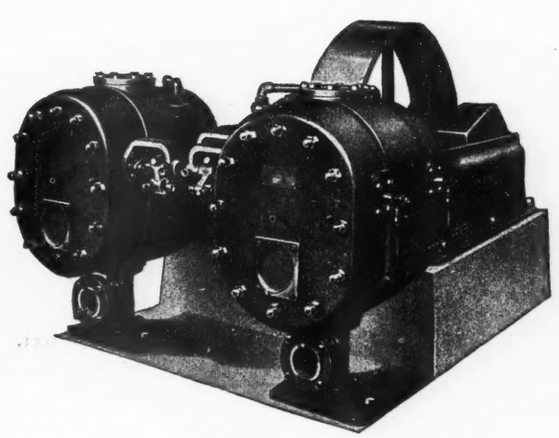

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462-C

No. 1 Hastie, 16-10-11, rigging to drill; Sure Shot Oil Co.'s No. 1 Frazier, 14-9-9, shut down 975 feet; Vinton Pet. Co.'s No. 29 Gray, 33-10-12, rigging to drill; Virginia Oil Co.'s No. 1 Laudry, 2-11-12, location.

EVANGELINE PARISH—Price & Champion's No. 5 Denver Land Co., drilling 300 feet.

GRANT PARISH—American National Oil Co.'s No. 1 Swope, 18-9-1E, derrick; Chatman et al's No. 1 Edenborn, 13-8-4, derrick; Helm Oil & Gas Co.'s No. 1 Calhoun, 9-7-4 rigging to drill; Lyle et al's No. 1 Calhoun, 32-7-3, shut down 1840 feet; Ray & Trammell's No. 1 Edenborn, 9-7-3, fishing 2470 feet.

JACKSON PARISH—Jackson Lincoln Oil Co.'s No. 1 Kavanaugh, 34-17-3, to resume drilling 1810 feet; Palmer Trust Co.'s No. 1 March, 12-15-1, drilling 400 feet; Petroleum Co. of La.'s No. 1 Netherland, 28-15-2, derrick; Phillips Pet. Co.'s No. 1 Boden, 24-17-3, drilling 900 feet; Whiteside et al's No. 1 Denman, 27-17-2, drilling 1910 feet.

JEFF DAVIS PARISH—Carradine & Co.'s No. 1 Rodd, 27-9-5, shut down 1430 feet; Liberty Oil & Sulphur Co.'s No. 1 Welch Land Co.'s 21-9-5, derrick; McLaughlin Oil Co.'s No. 2 McLaughlin, 35-8-6, drilling 500 feet; Simms Oil Co.'s No. 1 Louviere, 22-9-4, rigging to drill.

IBERVILLE PARISH—Clark & Greer's No. 1 Wilbert, 46-8-9, shut down 495 feet.

LAFOURCHE PARISH—LaFourche Oil & Gas Co.'s No. 1 Foret, 64-17-20, pulling 4½ inch screen, 1692 feet.

LASALLE PARISH—Ray & Trammell's No. 1 Uramia Lumber Co., 29-11-2, shut down 2528 feet; Simma Oil Co.'s No. 1 Urania Lumber Co., 8-10-2, drilling 3022 feet.

LINCOLN PARISH—Empire Oil & Fuel Co.'s No. 1 Griffin, 17-19-1, drilling 2797 feet; Newblock et al's No. 1 Davison, 26-19-3, drilling 3188 feet; Ruston Oil & Pipe Co.'s No. 1 Carter, 12-18-3, derrick; Simms et al's No. 1 Thomas, 24-18-4, tested salt water 2547 feet; Tulsa Prod. Co.'s No. 1 Fuller, 34-20-3, arranging to drill.

MOOREHOUSE PARISH—Imperial Pet. Co.'s No. 2 Allison, 6-20-5E, rigging to drill; No. 3 Allison, derrick; Ridge & McLaughlin's No. 1 Zachery, 21-23-8E, drilling 852 feet; Southern Carbon Co.'s No. 6 Spyker, 9-20-5, rigging to drill; The Texas Co.'s No. 1 Tensas Delta Land Co. 4-21-4, shut down; Transcontinental Oil Co.'s No. 1 Wayman Lumber Co., 1-18-5, shut down 195 feet.

NATCHITOCHES PARISH—Harmony Oil Co.'s No. 1 Johnson, 17-6-5, shut down 1870 feet; Eugene Kelly's No. 1 Fitz, 12-10-10, derrick; Planters Oil & Mineral Co.'s No. 1 Ayers, 3-13-7, reaming to bottom, 2195 feet.

ORLEANS PARISH—Gentilly Oil & Gas Co.'s No. 1 Segas, 14-23, reaming to bottom, 1550 feet; Louisiana Crude Co.'s No. 1 Milner, 14-23, tested salt water, 1785 feet.

OUACHITA PARISH—Alexander et al's No. 1 Eby & Austin, 51-18-3E, drilling 3590 feet; Bell Oil Co.'s Nos. 1 Brooks, 55-17-3, derrick 1 Rhymes, 22-17-4, shut down, 1900 feet; 1 Parker, 39-18-4E, derrick down; 1 Thomas, 24-18-4, derrick; Dixie Oil Co.'s No. 1 Grayling 25-16-2, reaming to bottom, 3387 feet; Hall Oil Co.'s No. 1 Richardson, 25-18-1E, derrick; F. Hatcher et al's No. 1 Hatcher, 17-19-4, location; H. N. Huber's No. 1 National Bank, 36-19-4, drilling 275 feet; H. N. Huber's No. 2 Edwards, 1-18-4-E, derrick; Ladel et al's No. 1 Davis, 6-19-5, drilling out plug 2077 feet; United Leasing Co.'s No. 1 Schmidt, 35-16-5, location.

RAPIDES PARISH—J. S. Daughtery's No. 1 Ball, 39-5-3E, drilling 750 feet Hartman & Phelps' No. 1 Barett, 40-5-1, rigging to drill; E. F. Simms' Nos. 1 Cady Lumber Co., 16-3-3, set 6 inch 3367 feet; 1 Rapides Lumber Co., 13-2-3, shut down 2663 feet.

RICHLAND PARISH—Sebring Oil Co.'s No. 1 Richardson, 5-18-10, drilling 600 feet.

SABINE PARISH—Belmont Oil & Gas Co.'s No. 1 Skinner, 5-8-11, fishing 2225 feet; Dominion Oil Co.'s No. 1 Russell, 16-8-13, drilling 1030 feet; Garrett-Gandy's, 4-5-12, set 6 inch 2500 feet; Pomeroy & Hamilton's No. 4 Louisiana Long Leaf Lumber Co., 17-6-12, drilling 2537 feet; McCormick & Smith's No. 1 Stephens, 17-9-11, shut down 975 feet; Simms Oil Co.'s No. 1 Logan, 22-10-12, set 6 inch 2967 feet; Sinclair Oil Co.'s No. 1 Louisiana Long Leaf Lumber Co., 25-6-11, fishing 2400 feet; Stubbs et al's No. 1 Anthony, 1-4-13, derrick.

ST. LANDRY PARISH—McCormick & Smith's No. 1 Godchaux, 10-3-4E, shut down 2828 feet.

ST. MARTIN PARISH—Apex Oil Co.'s No. 2 Moreisei, 10-9-5, preparing to test 800 feet; Canadian Oil & Gas Co.'s No. 1 Patout, 16-11-6, derrick; Emerson & Sutton's No. 3 Martin, 5-9-5, drilling 1550 feet; Interstate Oil & Gas Co.'s No. 1 Pourceaux, 23-9-5, standing 1283 feet; Oriental Oil & Gas Co.'s No. 1 Breaux, 23-9-5, shut down 1285 feet; Shakespeare Oil Co.'s No. 1 Babb, 27-9-5, arranging to test 1530 feet.

TERREBORNE PARISH—Foundation Oil Co.'s No. 5 Lirette, 33-19-19, drilling 1842 feet; 1 Smith, 23-19-19, drilling 397 feet.

UNION PARISH—Conservative Oil Co.'s No. 1 Clark, 17-23-1E, derrick; D'Arbonne Lumber & Oil Co.'s No. 1 D'Arbonne Lumber Co., 14-19-2E, derrick; Federal Pet. Co.'s No. 4 Union Saw Mill, 15-20-3E, sidetracking bit 1275 feet; Harris Oil & Refining Co.'s No. 1 Baupman, 26-21-1W, drilling 2347 feet; Gladys Belle Oil Co.'s No. 1 Security Trust Co., 18-21-1-E, rigged to drill; Trans Continental Oil & Gas Co.'s No. 1 Redden, 9-20-1E, reaming 2960 feet; The Texas Co.'s No. 1 Grayling Lumber Co., 29-21-4E, location; Universal Petroleum Co.'s No. 1 Andrews, 28-22-4W, rigging to drill.

VERNON PARISH—Fred I. Getty et al's No. 1 White Gradlin Lumber Co., 17-4-10, drilling 2575 feet; Clark & Greer's No. 1 Pine Lumber & Mfg. Co., 23-1-8, drilling 777 feet.

WEBSTER PARISH—American Oil Co.'s No. 1 Crichton, 26-18-10, shut down 3000 feet; Banks Oil Co.'s Nos. 1 Lee, 25-22-9, shut down 2000 feet; 2 Lee, 25-22-9, drilling 800 feet; Costile Oil Co.'s No. J. F. Giles, 28-23-11, rigging to drill; Eagle Pet. Co.'s No. 1 Warren, 12-22-9, derrick; Kansas City Synd.'s No. 1 Walter, 8-17-9, shut down 2675 feet; La-Miss Oil Co.'s No. 1 Denman, 1-22-11, shut down 1332 feet; Midway Oil & Gas Co.'s No. 1 Heflin, 24-17-9, shut down 500 feet; Red Rock Pet. Co.'s No. 1 Haynes, 10-23-9, drilling 200 feet; E. B. Selden's No. 1 Taylor, 30-22-10, drilling 2025 feet; Southwestern Gas & Electric Co.'s No. 1 Dickson, 16-20-9, derrick; Gilbert Williams' No. 2 Parham, 18-18-8, drilling 1372 feet.

REFINERY CHANGES HANDS

The refinery and other assets of the Amarillo Petroleum & Refining Company of Amarillo, Texas, have been purchased by Reece S. Allen and associates of Wichita Falls, who have changed the name of the organization to the Reece S. Allen Refining Company. It is announced that the general office of the company will remain in Amarillo.

The Oil Weekly
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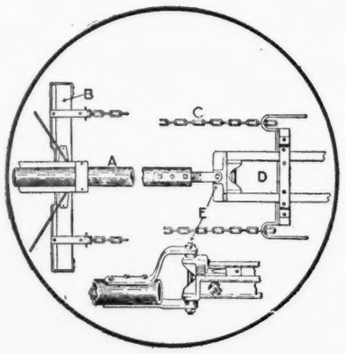

DIAGRAM SHOWING PATENTED FEATURES
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B—Singletree Attachment
C—Tug Chains
D—Adjustable Fastening Device
E—Coupling Device

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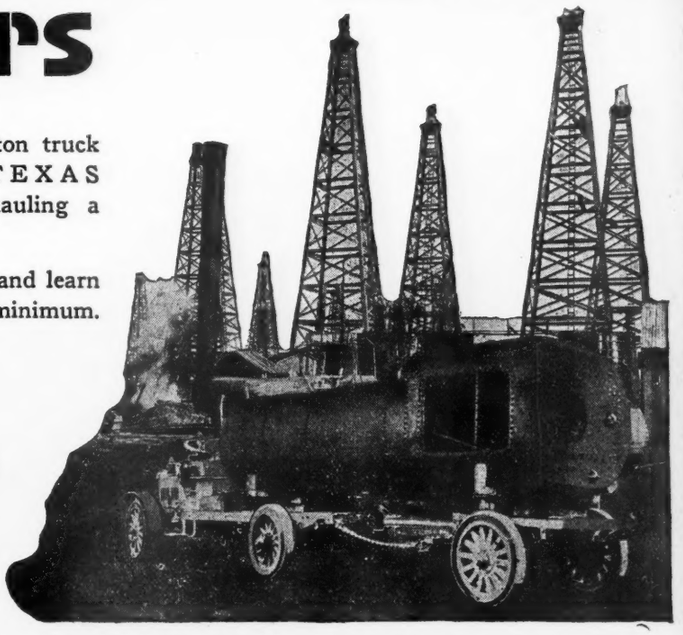

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ENGINEERING ASPECTS OF THE PETROLEUM INDUSTRY OF WORLD

(Continued from Page 52.)

this would not have been the case without some well organized plan to combat the difficulties encountered.

Petroleum Construction Engineer

For the petroleum construction engineer, there is the construction work necessary to carry on the work throughout the fields. There will be power plants, compressor plants, and dehydration plants to construct, and transportation and storage problems to consider after sufficient quantities of oil have been produced. In this work the problem of transportation is an important one. Besides the overland transportation in tank cars, there is the construction of large pipe lines throughout the United States to bring the oil within access to the markets. Not only the size of the pipe lines, but the number of pump stations necessary to transmit the oil through these pipe lines are some of the problems to be considered. The line itself in some territory has to be protected and taken care of in such a way as to avoid corrosion and its ultimate destruction in a comparatively short time, occasioned by the action of certain minerals in the soil through which the line is laid. Pump stations have also been built a certain distance apart, largely because a certain spacing worked successfully on pipe lines that were already in operation. A scientific study of such problems might reveal the fact that simple alterations in present practices would give results tending to lower costs of operation, and what is more important, a more economical use of the crude petroleum as fuel in the pumping plant.

In regard to storage, many problems present themselves whose solution, as proven by recent investigations, will tend to conserve the supply of oil which has heretofore been lost. One of these is the loss through evaporation. This loss is due to improper construction of storage tanks and mishandling of the oil so that the lighter products from the oil, in the form of gases which include the best part of the oil, are needlessly lost. It has been stated by many practical men that evaporation losses do not amount to much and it is not worth the expense of trying to prevent such losses. It is found from technical investigations that they are quite substantial, and even though it has been known for years that white paint will reflect heat, and dark paint will absorb it, it is a rare sight to find storage tanks where this simple fact has been taken advantage of.

The proper construction of tanks also has considerable to do with the fire hazard. A Bureau of Mines engineer in his investigations on this single problem has found that a great saving can be consummated by constructing tanks and protecting them in such a way as to prevent lossses from fires caused by lightning and other sources.

For the mechanical engineer equipped with a knowledge of the petroleum industry, there is a field of investigation in the more efficient utilization of petroleum as fuel, particularly in connection with the Diesel type of engine, for it has been demonstrated that in this engine petroleum as fuel will give two to three times more efficiency than when the same fuel is burned under a boiler to generate steam. In burning oil and gas directly under a boiler, there are also important problems in the construction of furnace settings, which will give a greater efficiency such as proper arrangement of draft, installation of a damper in the stack, proper location of the air intake, etc. A specific example of the savings that might be obtained by properly constructed furnaces is shown by the records of the U. S. Fuel Administration. They demonstrated, in their inspection of boiler plants in a number of the larger cities, by making tests and recommending repair work which involved no new installations of expensive equipment, that from 5 to 25 per cent of fuel could be saved.

Refinery Engineer

The refinery engineer has a very large field to cover, not only the construction and operation of his plant, but the maximum utilization of the crude product. At the present high prices being paid for crude petroleum, it is highly important that the most valuable products and the maximum yield be obtained from the original product. The setting of stills in refinery construction is important. It has been recognized that a still is an inefficient and wasteful user of fuel. Little attention was given this matter because the fuel was conveniently at hand and special effort for securing it was not necessary. Recent tests have shown that a great saving can be made in consumption of fuel by simple alterations in furnace design and the through-put of the still is also wonderfully increased.

New methods are being investigated and, as an indication of the possibilities of what may yet be accomplished in this field, it may be well to refer to the Burton process of cracking oil. By this method it is possible in general to increase the yield of gasoline from a fuel or gas oil by 25 per cent. The significant fact concerning this is that it has given to the trade 10 to 15 per cent more gasoline than would have been possible by using the older methods.

The possibilities of this industry have not yet been worked out to maximum efficiency by any means. There are a number of by-products which, with the rise in the price of oil, may be deciding factors as to whether or not a plant will operate at a profit. It is, therefore, as in metallurgy, a question of obtaining a maximum extraction at a minimum cost. The extractions in this case are carried on by distilling or cracking the crude product.

Natural Gas Engineer

When a sufficient quantity of natural gas is produced in a field to warrant special efforts in taking care of it, the natural gas engineer has an important field to cover. Until recent years, it has been the custom to allow natural gas to waste itself by blowing into the air all beyond that amount used for operating purposes in the field itself. Investigations have pointed out, however, that this is one of the most valuable fuels known. Some of the natural gases also contain gasoline vapor which, when condensed, is itself used as fuel in internal combustion engines and as a blending product to improve less volatile gasoline products. The natural gas engineer will, therefore, find an opportunity to familiarize himself with production, transportation and utilization of natural gas. The transmission of natural gas through pipe lines will in some cases involve the installation of compressor plants to assist in the transmission. The utilization of this gas for making casinghead gasoline has become a thriving industry. Compression and absorption plants are both in common use for the recovery of this product. Bureau of Mines engineers have pointed out the possibility of recovering gasoline from the residual gases of compressor plants. This gasoline heretofore has been wasted. From 30 compression plants which were tested it was found that there was an average of 0.337 gallons per thousand cubic feet in the residue gas tested. This, fortunately, can be recovered with a very small additional cost and the profits increased materially.

A recent problem that the engineer has been called upon to solve is the handling and storage of helium, which is found in some of our natural gases. The importance of this gas was demonstrated during the war for the inflation of dirigibles and other lighter-than-air machines. The problem that now arises is that of finding adequate storage for this gas for future use, after extracting it from those gases in which it is contained. According to our present knowledge, the possibilities of securing a supply of helium elsewhere are rather remote, once our natural gases are exhausted.

Oil Shale Engineer

A profession in the petroleum world which might be considered in its infancy is that of the oil shale engineer. As yet the work in this field has only been touched upon, and the engineer who takes up the problems of this industry will have to consider mining investigations, probably similar to those used in our coal regions, together with retorting the shale after it has been mined, a problem which will involve mechanical engineering. After the shale has been retorted and the shale oil procured, it will then become necessary to refine the product, which will call for a knowledge of the refining industry, probably similar to the refining now in operation for crude petroleum. Shale oils, however, have seemed to possess such peculiar properties that the methods of handling them economically have not yet been fully determined. But it is hoped that in case of a marked shortage of petroleum resources from wells, the oil shales will afford us some relief. This relief can be obtained only after considerable technical investigational work and, since the field is new, opportunities for the engineer are decidedly bright. Enough experimental work has been carried on to indicate that the production of oil from shale is not for the company of small means. It will be undoubtedly an undertaking that will involve handling low grade raw material on a large scale, and should be undertaken only by the best technical skill, backed by substantial capital.

Conclusions

With the present situation of the oil industry very briefly outlined, and the fields that the engineer may enter, to assist in conserving and prolonging our petroleum supplies, briefly touched upon, it is hoped that engineers and those of the coming generation who are seeking for a profession will interest themselves in this industry. By the application of scientific and technical principles a great deal can be accomplished and a great many common, ordinary everyday wastes, such as running oil into open sumps, town lot drilling, flowing wells with gas without attempting to separate the oil and gas and conserve the latter, and allowing gushers to flow unrestrained, can be eliminated. These practices, while at times unavoidable, are to be entirely discouraged and the engineer can, by taking up this work, do more than can be accomplished by any other means.

FIRST LEASE UNDER NEW LAW IS APPROVED BY SECRETARY

Washington, D. C., June 30.—The first lease to be issued under the oil land leasing act was this week approved by Secretary of the Interior Lane. The lease was issued as a compromise under section 18a of the act, following approval of its terms by President Wilson.

Under this compromise James Owens, Hugh E. West and the M. K. Burke Mining & Investment Company secure a lease on 280 acres in the Salt Creek oil field of Wyoming. Under a royalty of fourteen and two-sevenths per cent of the value of the oil or gas produced from the leased land or, at the option of the lessor (the government), fourteen and two-sevenths per cent of the oil or gas produced. This gives the government the option of taking its royalty in money, or if it desires, in oil.

There are a number of other leases now pending in the General Land Office under the relief provisions of the act, at least one of which deals with oil in the naval reserve. Efforts are being made to put them through without delay, as the government is anxious to interfere as little as possible with the operations of oil producers having valid claims.

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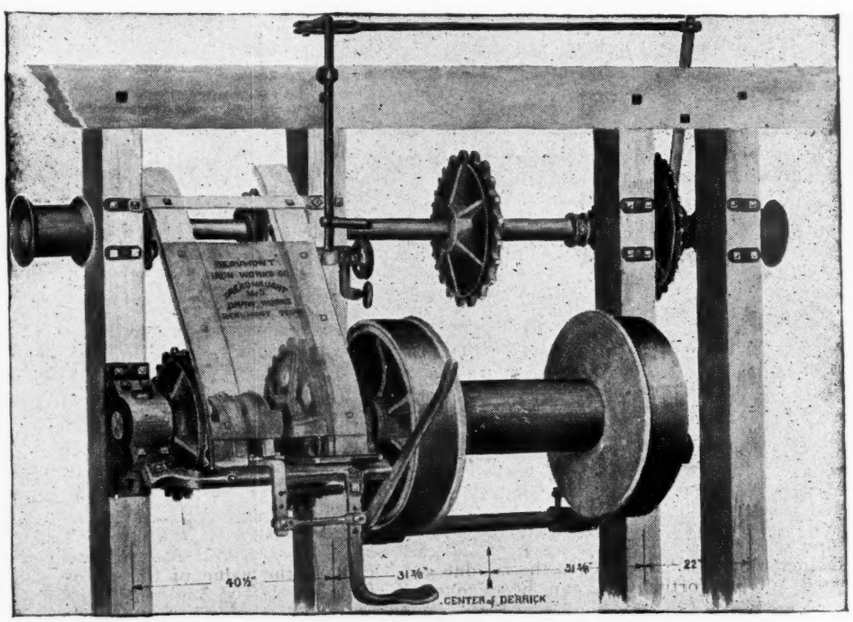

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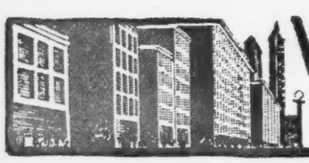


WEEKLY MARKET REVIEW

BY J. P. SCRANTON & CO DALLAS, TEX.

FOR months, individual members of the thinking public have been centering their attention on some conceivable as well as practical method whereby the world's production might be increased. We have come to the conclusion that the real problem of the hour is that of distribution. This condition, largely explains the present status of credit and plays a large part in holding the general security market down to its present dull basis.

If food rots, and maufactured goods are not distributed for lack of transportation facilities, the farms and factories produce in vain. Many economists and financial experts, whose views are heralded as the wisdom of sages, say that our present-day difficulties are due to lack of production, but the goods that we have already produced is not being distributed, due mainly to the outlaw railroad employee's strike that exists in the country today. Reports state that this condition is gradually growing worse instead of better.

Labor does not realize that it is well off and standing on far more favorable ground than capital, comparatively speaking. The world is in an upheaval state—part starving and part in an intoxicated period of prosperity, squandering its reserve on the nonessentials. With the rate of exchange rising, the Europen importer loses money on time deliveries and refuses further committments—hence the manufacturer's demands for raw materials go unsupplied in his market. When the tables are turned, the American exporter refuses to risk a reasonable return for his goods. So we see that in times of widely fluctuating exchange rates international trade conditions are extremely unfavorable. This has been the case for the past several months, but future prospects are brighter.

As we have stated for the past two weeks, the center of attention is on political developments. Those individuals, who are interested in the security market realize the importance of the November election, and are working for what they think to be the better end. Whatever the outcome may be, Americans will have to get behind the winning party as Americans and throw some semblance of unity into the project, or we shall have to abandon the hopes that we are kindling for improved financial and trade conditions.

Telegrams from three New York financial houses, members of the New York Exchange, state that business in the East is extremely dull. On one day last week there were only 200,000 shares traded on the floor of the exchange. When we consider that one year ago, million-share days were common occurances, the great difference is realized. As a member of one Eastern firm expressed it to us, "When we have no customers and there is no call for the good securities that we have on hand, I can not be bullish on the market outlook." This is the psychological conclusion for his particular business, but at the same time it represents actual conditions in other lines.

The trading for the week has been professional in tone, with scarcely an exception. The market has been narrow, dull and disinteresting. Call money has been offered in very limited amounts at 9 per cent. No improvement in money is looked for until after government tax funds have been completely cleared through the banks. By that time surplus funds will be called upon to start crop movements. Monday's market varied hardly a point in the sales of respective issues. A short interest of considerable size developed on Tuesday.

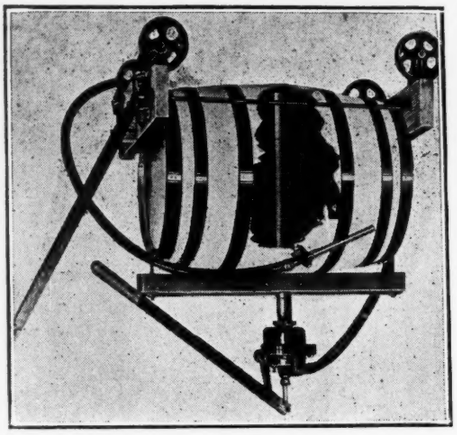
For those who have funds to invest, we recommend the most conservative stocks or long term bond investments.

NEW YORK LISTED STOCKS

	High	Low	Close
Caddo Central	19	16⅛	18½
Columbia Gas	54	52	54
California Petroleum	30½	29½	29½
California Petroleum (pfd)	67½	66½	
Mexican Petroleum	180½	175	179½
Ohio Cities Gas	40¼	38¾	40⅛
Oklahoma Pro. & Ref.	4¼	4⅛	4⅛
Pan-American Petroleum	103	101	102
Pierce Oil	17⅞	15½	15½
Royal Dutch	114½	112	113½
Sinclair Cons. Oil	31⅞	31⅛	31½
Standard Oil of N. J.	660	650	659
Texas Company	45¾	44¾	45
Transcontinental Oil	17	14¾	15¾
T. & P. Coal & Oil Co.	51½	46⅝	51
Union Oil of Delaware	32½	31⅜	31⅜

CURB AND UNLISTED STOCKS

	High	Low	Close Bid	Close Ask
Cosden & Company	7¼	6¼	6⅞	7⅛
Galena Signal Oil	52	45	45	50
Gulf Oil	410	425	425	440
Humble Oil & Refining	280	250	250	280
Invincible Oil	37	34	34	36
Internationl Pet.	37	34	34	36
Lone Star			25	27
Magnolia Petroleum			365	400
Midwest Refining	144	142	142	144
Ohio Oil	295	283	285	292
Prairie Oil & Gas	570	550	550	570
Penn Mex	45	46	40	45
Standard Oil of N. Y.	390	380	380	390
South Penn Oil	280	265	270	280
Simms Petroleum	18	15	16	17
Skelley Oil	10½	9¼	10¼	10½
Salt Creek Producers	34	31½	32½	34
Tropical Oil	21¼	19½	20¾	21¼
Vacuum Oil	380	370	370	380
White Eagle Oil & Ref.	20	16	16	20
White Oil Corporation	20½	18½	19	20



It will be of interest to all garagemen, automobile and truck manufacturers to know that the A. J. Wood Manufacturing Company of Grand Rapids, Michigan, has been purchased by the Bennett Injector Company of Muskegon, Michigan. For the past few years the A. J. Wood Manufacturing Company has been manufacturing the Wood's No-Valve Grease Injector which is used for pumping heavy grease direct from original grease barrel into gear cases and transmissions. The Wood's Grease Injector is quickly and simply attached to any grease barrel which is carried on special truck to any part of garage or factory. Quickly and without handling, the grease is applied where needed with great accuracy as pump throws exactly one-fourth pound of grease per stroke. A special Non-Drip nozzle instantly stops the flow of grease when through pumping. At the present time more than 12,000 of these pumps are in daily operation in all parts of the country.

American Exports of Mineral Oils in May Exceed Last Year

WASHINGTON, D. C., June 29.—American exports of mineral oils, with the exception of illuminating oil, during the month of May, 1920, were greatly in excess of the exports of the same month of last year, according to a tabulated statement issued by the Bureau of Foreign and Domestic Commerce, of the Department of Commerce.

May exports of crude mineral oil amounted to 27,539,689 gallons, valued at $2,506,241. During the eleven months ended May 31, the exports totaled 330,376,967 gallons, valued at $21,437,526. Last year the May exports amounted to 7,443,401 gallons valued at $392,243, and for the eleven mnoth' period, to 153,094,757 gallons, valued at $9,328,298.

In illumniating oil, American exports last month amounted to 56,458,213 gallons, valued at $9,723,441, while the eleven months period totalled 854,381,326 gallons, valued at $115,798,664. The exports of May, 1919, were 79,939,490 gallons, valued at $9,818,216, and for the eleven months' period, 601,341,849 gallons, valued at $66,761,263.

Lubricating oil exports totaled 41,569,932 gallons valued at $14,083,542 in May, 1920, and for the eleven months ended May 31, 1920, 312,275,164 gallons valued at $101,845,346. In May, 1919, the total was 19,137,977 gallons, valued at $6,304,947, and for the eleven months' period ended May 31, 1919, 248,073,712 gallons valued at $78,450,742.

The gasoline exports for the month were greatly in excess of the exports for the same month of 1919, but for the eleven months period the total fell off somewhat. The May, 1920, figures are 68,957,666 gallons, valued at $18,397,251, and the exports for the eleven months reached a total of 411,701,923, valued at $104,611,405, as against 436,519,710 gallons valued at $109,077,825 for the same length of time in 1919, and 26,121,658 gallons valued at $7,039,794.

The exports of residium, fuel oil, etc., were as follows: May, 1920, 69,762,132 gallons valued at $4,433,413; May, 1919, 42,668,505 gallons, valued at $1,998,042; eleven months ended May 31, 1920, 669,123,382 gallons, valued at $36,687,625; eleven months ended May 31, 1919, 844,060,095 gallons, valued at $47,155,172.

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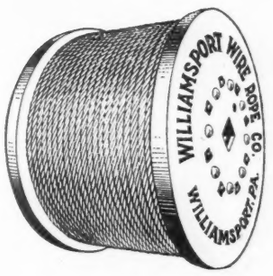

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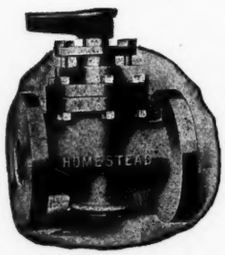

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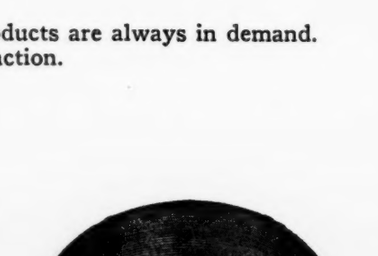

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Refining of Crude Oil and Action of Absorption Clays

THE following paper was read by F. C. Thiele of Oklahoma City, Okla., at the recent meeting of the Mid-Continent section of the American Society of Mechanical Engineers at Tulsa, Okla., held late in May:

It has long been known that absorptive clays, especially hydrosilicates, when brought in contact with crude mineral oils or fractions thereof, exert a selective absorption on them and practical use is made of this property of absorptive clays in bleaching mineral oils by filtration.

While studying the different problems of increasing the yield of gasoline from crude mineral oils for motor purposes, it occurred to me in 1913 that the shales, invariably clays impregnated with larger or smaller amounts of bitumen, yielded on being subjected to distillation a rather large amount of light hydrocarbons suitable for motor purposes and possessing properties of gasoline manufactured from crude petroleum by distillation.

For instance, the shale oil of the Youngs Paraffin Light & Mineral Oil Company in Scotland shows an average yield of:

Gasoline and Naphtha	6.09 %
Burning Oils	31.84 %
Intermediate and Heavy Oils	23.97 %
Paraffine Scale	13.53 %
Loss	24.57 %

It could not be assumed that the above ingredients pre-existed in the shale but were formed by the distillation of the raw product. If, however, the crude shale is not subjected to distillation but is extracted with solvents, a heavy, sticky bitumen is obtained which does not contain a trace of light hydrocarbons. This bitumen is classed under the compounds asphalt and asphaltite. Distilled by itself it yields hydrocarbons ranging in specific gravity from 0.188 to 0.867, while commercial gasoline possesses specific gravities ranging from 0.637 to 0.770. The formation of gasoline during the distillation of the crude shale could therefore only be attributed to the action of a catalyzer, in this case the shale itself.

Shale Composition

Shale has the following composition:

SiO_2	58.38 %
Al_2O_3	15.47 %
Fe_2O_3	4.03 %
FeO	2.46 %
MgO	2.45 %
CaO	3.12 %
Na_2O	1.31 %
K_2O	3.25 %
H_2O	1.34 %
H_2O above 110 C.	3.68 %
TiO_2	.65 %
Co_2	2.64 %
P_2O_5	.17 %
SO_3	.65 %

This analysis compares closely with the composition of dry American fullers earth (absorptive clay):

SiO_2	57.22 %
Al_2O_3	15.30 %
Fe_2O_3	12.90 %
CaO	3.73 %
MgO	2.84 %
So_3	1.55 %
Co_2	1.90 %
P_2O_5	.10 %
Moisture and Alakalis	4.46 %

The earth was therefore selected for the following investigations, and similar products have finally been employed on a large commercial scale. The object sought was to study the effect of the absorptive clay on crude petroleum and fractions thereof at elevated temperatures.

Cement Crude

Crude oil from Cement, Oklahoma, of specific gravity 0.842, representing the average type of the oils found in the Mid-Continent oil fields, was mixed with an equal weight of granular absorptive clay in an iron retort and digested at a temperature of 100° C. for six hours, care being taken that no distillation took place. For this purpose an effective reflux condenser was attached to the retort. After this lapse of time the contents were cooled and then emptied. And the obtained oil was of light green color and of a beautiful red transparency. Its specific gravity was .832, the original crude oil had a dark brownish black opaque appearance. After draining off the treated oil and carefully washing out all traces of it in the clay with light gasoline, the clay was air dried and then extracted with carbon tetrachloride. This solution was evaporated on the water bath, leaving a black oily residue smelling strongly of phenol compounds. After weighing it was found that the crude Cement oil was composed as follows 90.2% light green transparent oil, spec. grav. .832; 9.8% black oily compounds.

Analysis of the black oil showed it to be composed as follows: 8.82% phenoloid compounds, .20% yellow resinous compounds. .98% black asphaltic compounds.

The action of the clay on the crude oil at 110° C. was primarily due to absorption and undoubtedly to coalisation or coalesence. This term signifies the gathering of minute particles into a larger complex (from the Latin term coalesco, to grow together, to combine).

It is known that the filtration of crude mineral oils at ordinary temperature through absorptive clay (fullers earth) is not successful, as the filtration is of the same color as the

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original crude oil and it requires therefore a prolonged digesting of the oil at an elevated temperature to coalesce the impurities and render them insoluble in the remaining mineral oil. This reaction can be carried out with all crude oils, each oil requiring its specific temperature according to the character and amount of impurities present.

Of main interest in the above analysis are the phenloid compounds, as they form the larger part of the separated substances.

The socalled phenoles in crude oils have been mentioned repeatedly in literature, especially by Mabery (Proceedings American Academy, Vol. 36-1901), Clifford Richardson (Journal Franklin Institute, Vol. 162), and Thiele (Chemiker Zeitung, 1901). They are usually described as compounds of high specific gravity and soluble in caustic alkalis when extracted from the distillates of crude oils.

During my researches on napththenes (cyclo paraffines) I followed certain lines of oxidation and discovered that a certain amount of the oxidized oil became soluble in caustic alkalis. On acidification a strong odor of phenole was generated and an oil separated which was identical with the phenoloid compounds extracted from the crude oils or their distillates. Both compounds were colored intensely red by a solution of diazobenzole hydrochloride, proving their identity. The so-called phenoles are theerfore nothing else but oxy-napthenes, and this composition accounts for their failure to react with a solution of ferric chloride which they should do if their composition were that of true phenoles. Their formation from napthenes can be expressed by the following formula:

$$C_6H12+O_2=C_6H_{10}O+H_2O$$

These oxy-napthenes can react again with one molecule of hexahydro-benzole as follows:

$$C_6H_{10}O+C_6H_{12}=(C_6H_{10})+H_2O$$

giving rise to the formation of asphalt which has rightly been interpreted by chemists and geologists as "oxidized mineral oil."

Since it was established that certain clays exert an absorptive and coalescent action on crude mineral oils at elevated temperatures it was decided to study their action when the oils are distilled in the presence of absorption clays reaching temperatures above 400°C.

Out of a great many analyses I give a comparative distillation of Ranger, Oklahoma, crude oil which serves as a type of the mid-continent crude mineral oils:

Distillation of Ranger, Oklahoma crude oil. Specific gravity .8328/15°C.

An equal amount of the crude oil and absorptive clay were mixed and subjected to careful distillation, the charge being run to dryness:

Obtained were:

89.4% distillate, spec. gr. 780/15°C.
5.—% resinous residue in still.
5.—% gases containing largely Butylene, C_4H_8.

Fractional distillation of the distillate gave the following results:

37.7°C to 200°C....69.—% Gasoline, spec. gr. 762/15°C.
200.—C to 232°C....18.6% Naptha, spec. gr. 806/15°C.
232.—C to 245°C....8.—% Kerosene, spec. gr. 828/15°C.
Bottoms 4.4%.

Comparisons of yields of distillates from the crude oil and by the process:

Crude Oil Direct—Crude Oil Subjected to Process:

To 232°C.....39.20% Gasoline to 232°C.... 78.37% Gasoline.

The obtained results show that a complete change in the composition of the original crude oil was effected by the distillation of it in the presence of absorptive clay. It has been shown that at a moderately elevated temperature the clay exerts an absorptive and coalescent effect on certain constituents in the crude oil. It must be assumed that these effects are still more intensified by a further rise in temperature and that the compounds of higher molecular weight are effected. They loose in the absorbed state their side chains under the influences of heat and form hydrocarbons of lower mole-cular weight.

I proved this reaction by subjecting Pinene (oil of turpentine) to the described process. This substance yielded di-hydro-benzole according to the following formula:

$$C_{10}H_{16}=C_6H_8+{}_7C_4H_8 \text{ (Butylene)}$$

The Butylene was identified by its absorption in concentrated Mercuric Acetate coloring the solution blood red. It was afterwards regenerated from the solution by hydrochloric acid and led into Bromine formed a liquid Bromide of specific gravity 1.370.

The obtained gasoline is unlike the gasoline produced by the different pressure processes and of a far greater stable composition. It contains only small amounts of aromatic and unsaturated hydrocarbons. It is almost wholly composed of paraffine and saturated naphthene hydrocarbons either one predominating according to the composition of the original crude oil employed. It is remarkable that even malthas and solid asphaltum are decomposed by this process into light hydrocarbons. The attended table will show this in a striking manner.

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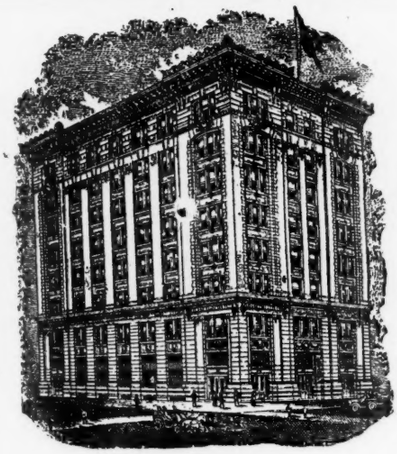

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tion of commercial gasoline according to the described process and comparison against original content:

Number	Crude Oil	Specific Gravity	Original Gasoline Content	Synthetic Gasoline produced by process	Increased yield of Gasoline above natural contents in crude oil
1	Garber, Okla.	.819	40. %	53.4 %	13.4 %
2	Garber, Okla.	.819	40.0 %	51.2 %	11.2 %
3	Garber, Okla.	.819	40. %	62.7 %	22.7 %
4	Garber, Okla.	.819	40. %	56.8 %	16.8 %
5	Garber, Okla.	.819	40. %	75. %	36. %
6	Ranger, Texas.	.842	39.26%	78.37%	39.11%
7	Healton, Okla.	.880	18. %	52.3 %	34.30%
8	Pine Island, La.	.897	none	38.8 %	35.8 %
9	Mexico, heavy.	.940	none	24.8 %	24.8 %
10	Boryslaw, Galicia reduced black oil Vinita, Okla.	.940	none	28. %	28. %
12	Burkburnett, Texas.	.836	40. %	57.4 %	*17.4 %
13	Francis, Okla.	.893	0.50%	43.7 %	43.2 %
14	California, heavy	.992	none	24.4 %	24.4 %

*Gassing heavily.

An interesting feature develops in the foregoing table. The light gravity crude oils apparently give a smaller increased yield of gasoline above the natural contents in the crude oil than do the heavier crudes, which often do not contain any gasoline whatever. This feature is however only apparent. If the natural contents of gasoline in the light crude oil are deducted, and the obtained increase of gasoline is calculated as originating from the remaining residue, it appears that it is the heavy fractions in the crude oil which furnish this increased yield. Taking No. 1-4 and deducting 40% of natural gasoline in same, we obtain for the remaining 60% of residue the following increased yields of gasoline:

No. 1.....22.3% gasoline
No. 2.....18.7% gasoline
No. 3.....37.8% gasoline
No. 4.....28. % gasoline

It appears from the list that the paraffine crudes (No. 3-5-6) yield larger amounts of synthetic gasoline than do the pure asphaltum crudes (No. 9-10-14). This larger yield from the paraffine crudes is due to their containing large amounts of solid hydrocarbons in solution. In order to establish this fact an equal amount of solid paraffine wax of M. P. 53°C and Floridin were mixed and subjected to distillation. Obtained were: 65.% pure white distillate, specific gravity 73 7/15°C. This distillate was fractionated, giving the following results:

48 to 150°C.=17.5% gasoline, specific gravity 693/15°C.

150 to 232°C.=56% gasoline, specific gravity 764/15°C.

Calculated on the original wax this gave a yield of 47.8% gasoline of specific gravity .744/14°C. This gasoline was composed as follows:

43. % Paraffine hydrocarbons, specific gravity 690/15°C.

37.% Saturated Napthene hydrocarbons.

20.% Hydrocarbons extracted by H_2SO_4 of 97.3% strength. (These last hydrocarbons were wholly converted into formlites by the Nastjukoff reaction.)

Asphaltum crudes yield somewhat smaller amounts of liquid gasoline but furnish more gaseous compounds. This fact is easily understood if we consider a large proportion of the asphalite contents as composed of dehydropolynaphthenes, originally formed by the coupling or an oxy-naphthene with hexa-hydro-benzol.

$$(C_6H_{12}+C_6H_{10})—(C_6H_{10}O_2+H_2O)$$

The de-hydro-polynapthene when subjected to heat in the presence of absorptive clay yield two molecules of C_6H_{10}. This substance however may undergo further decomposition by increased heat and split up according to the following formula:

$$\left.\begin{array}{ll} C_6H_{10}=C_2H_4 & +C_4H_6 \\ \text{Ethylene} & \text{Butadiene} \end{array}\right\} \text{gaseous compounds}$$

This reaction has been observed repeatedly and Drs. Engler and Staudinger secured several years ago a patent for the manufacture of the last named compounds (Butadiene) substantially subjecting vapors from heavy oil residues at reduced pressures to a heat of about 450°C by passing them through heated tubes.

Absorption Clays

A great deal of work has been done on the action of absorptive clays on mineral oils previous to this treatise. Notably Day and his collaborators Gilpin and Cram published an exhaustive report on this subject (American Chem. Journal 1908) stating that the action of absorptive clays on mineral oils is due to surface tension.

The above results show that the only factors are absorption and coalescene. The process has been commercialized and is being rapidly adopted by western refiners to manufacture pure lubricating oils and large yields of gasoline from their crude oils.

Geologically the process discloses that crude oils coming in contact for prolonged periods with absorptive clays loose their oxidized constituents and become light colored, very often transparent oils. It is not necessary to assume that the oils must be subjected to temperatures from 100 to 110°C during this time. It suffices that the action be prolonged enough, that the clays are of strongly absorptive character and that only moderate amounts of water are presented during this stage.

An interesting discovery which I made during the course of these investigations is that when the dark colored oils—free from moisture, are distilled in the presence of absorptive clay yield always a certain amount of water, usually from 1 to 3% of the oil. This water is no doubt formed by the decomposition of the oxygenated compounds in the oil, but contains free sulphuric acid, nephthenic acids and nitrogen compounds, the latter always associated with "Phospherus." On evaporating the water to dryness and heating the residue with agneous caustic soda and the nitrogen can be quantatively determined as ammonia. The residue in the flask when again evaporated to dryness and oxidized with nitric acid yields in the addition of an acid solution of ammonium molyodate a copious precipitate of phospho-molydate of ammonia, from which the phosphoric acid may be separated by dissolving the yellow percipitate in caustic ammonia and precipitating the phosphoric acid by magnesia mixture.

I have found phosphorus in this manner in all dark oils and it therefore is constant constituent of this class of oils. That it has been overloaded so long is no doubt due to the fact that the proper method of obtaining it in a determinable state was not known. The mother substance which furnished the phosphorous compound (it can only be present in the oil as celloid) must be traced back to

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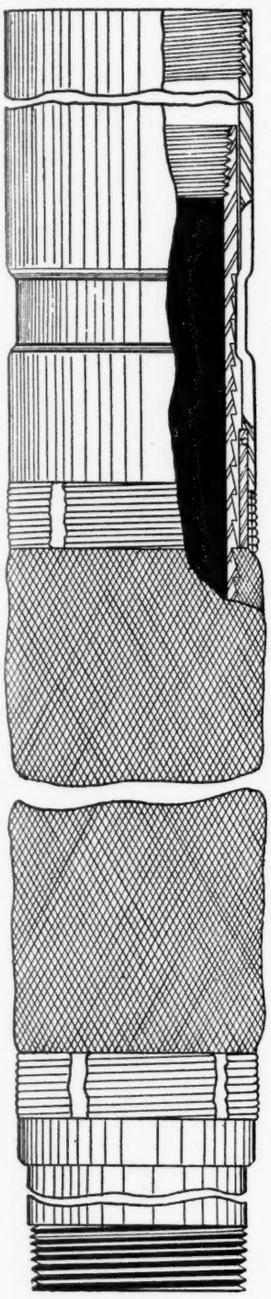

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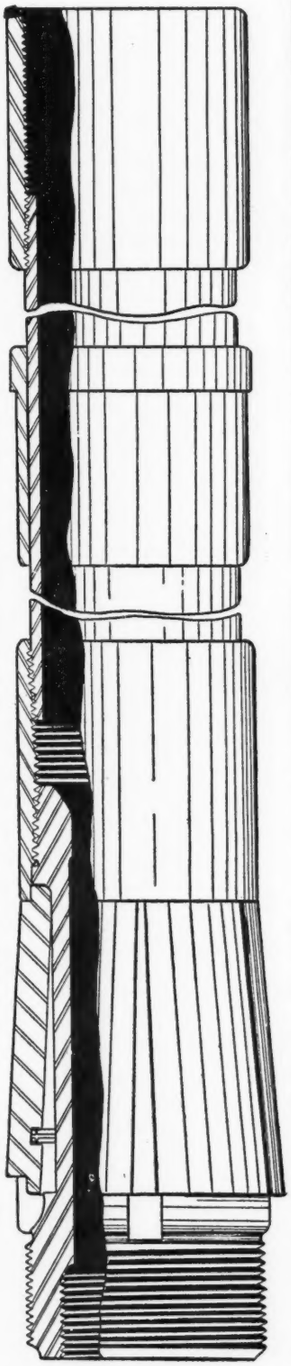

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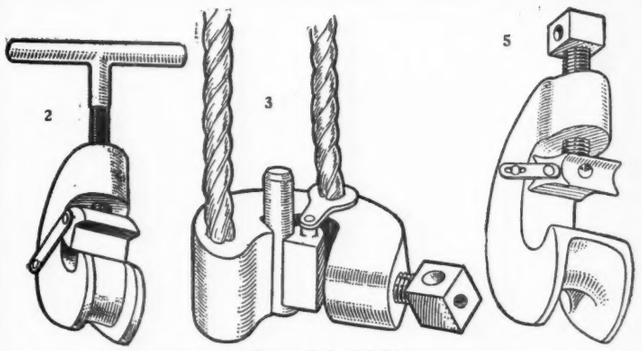

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necleo-albuminoids and this discovery furnished therefore a further strong proof of the organo-detritic origin of petroleum coinciding with the Engler-Noefer theory. It is not necessary to assume high pressure for its formation. Contact action of absorptive clays coupled with moderately elevated temperatures (which I often observe in deep oil wells) explain the formation of crude oils fully.

All crude dark colored oils treated by this process represent pure oily substances exhibiting strong dichroism, appearing red by transmitted light and a rich green color by reflected light. It is interesting to note how variable their composition is in the lighter fractions, some containing large amounts of light hydrocarbons and others scarcely any, due to the different conditions to which they were exposed during their formation and storage. All of these pure oils can however be reduced to excellent lubricating oils and it was never necessary for oil refiners to manufacture asphaltic residues to be sold for little or no profit if they had subjected their raw products to better chemical investigations before wasting untold values of our natural resources.

In addition to the foregoing explanation of the action of absorptive clays on crude petroleum and observation by L. Curwitsch (Zeitachrift. Chem. Ind. Koll 1912) must be mentioned which adds a third effect to the expounded properties of the clay. He mixed Amylene C_5H_{10} with Floridin (Florida Fullers Earth) and observed a considerable heating of the mixture. After letting the mixture stand for some time it was found that nearly all the Amylene C_5H_{10} had been Polymerized to Diamylen $C_{10}H_{20}$. Hexylene C_6H_{12} was polymerized to Di-hexylene $C_{12}H_{24}$. This conservation confirms the work of Dr. Engler on the natural formation of the napthenes and lubricating oils, published in his celebrated work "Das Erdeel". According to him both products are formed by the transformation and poly-merization of olefines. I observed the same effect by acting at elevated temperatures with absorptive clay on kerosene distillates which contain unsaturated compounds. Light green colored lubricants were formed, identical with the lubricants occuring in the pure natural oils. This polymerization of unsaturated compounds is strikingly illustrated, which I carried out as follows:

An equal amount of oil of turpentine, sp. gr. 873 and Floridin were mixed and subjected to distillation.

50% of liquid hydrocarbons sp. gr. 835 were distilled off while 50% residue spr. gr. 936 remained in the still.

This residual transparent oil was of a greenish-red color and possessed the properties of good lubricating oil. Its boiling point was above 300°C but it did not contain any solid hydrocarbons and it did not congeal at 10°C. It resembled in this respect the oils obtained from Gulf Coast Texas crudes.

Its composition was principally represented by polynaphthenes as it was colored intensely red by a benzol solution of picric acid. The action of absorptive clays, or hydrosilicates on crude mineral oils at elevated temperatures can be summed up as follows:

Absorption, Coalescene, Polymerization, and de-polymerization of high-molecular hydrocarbons by splitting off their side-chains.

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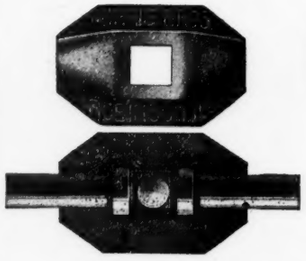

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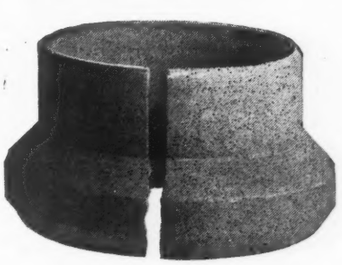
Baker SHOE GUIDE



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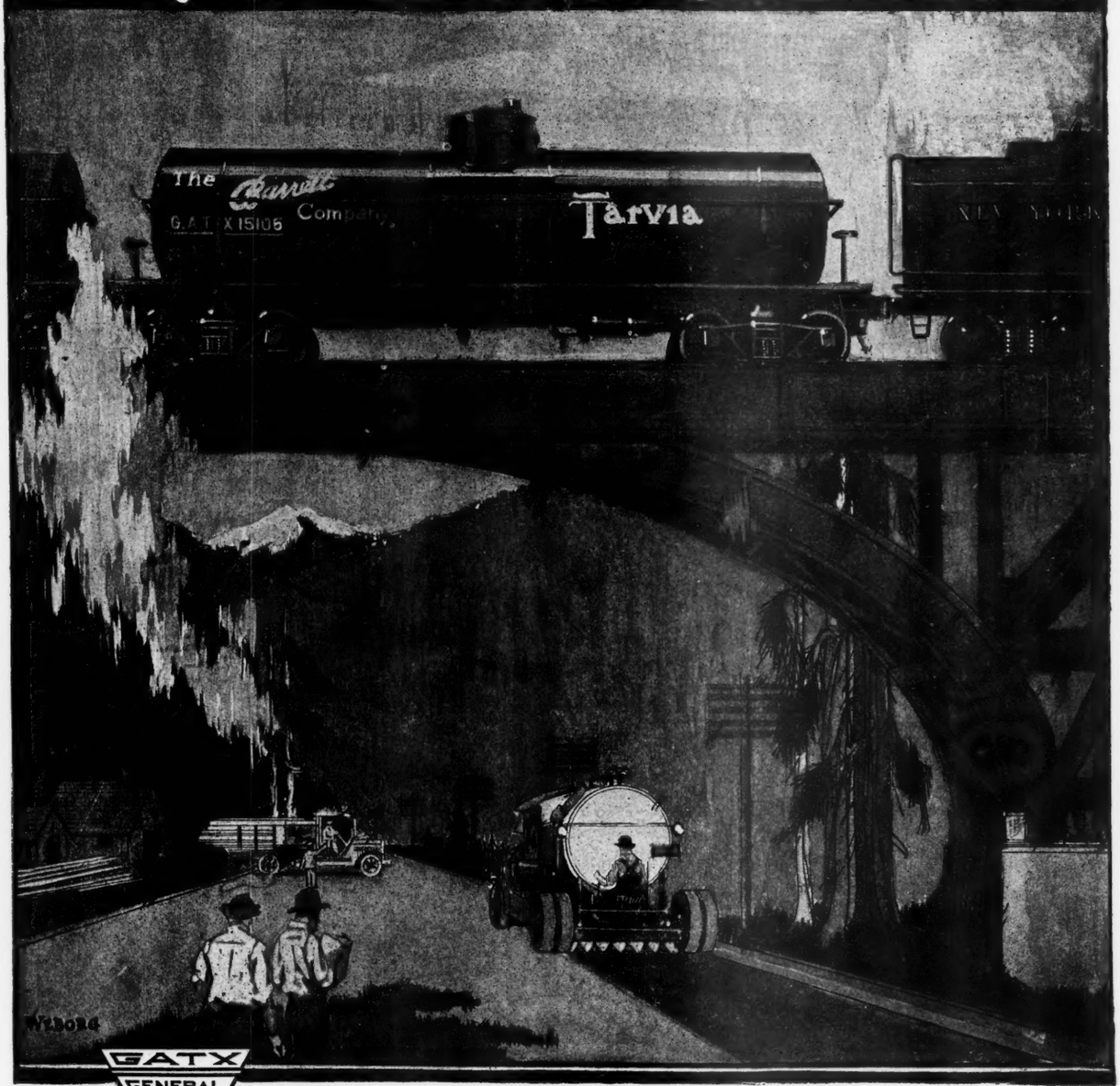

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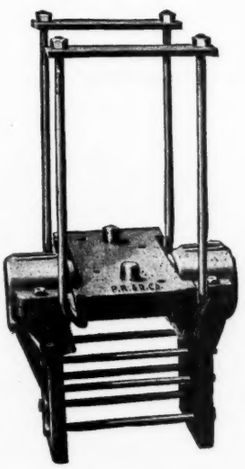

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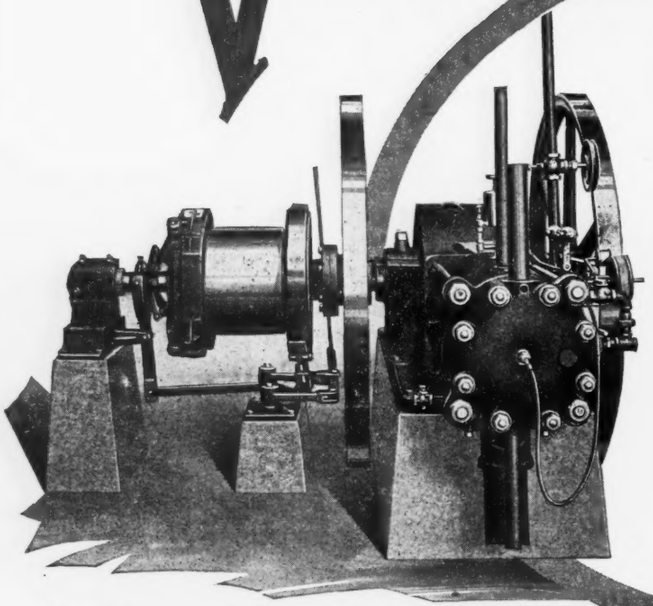

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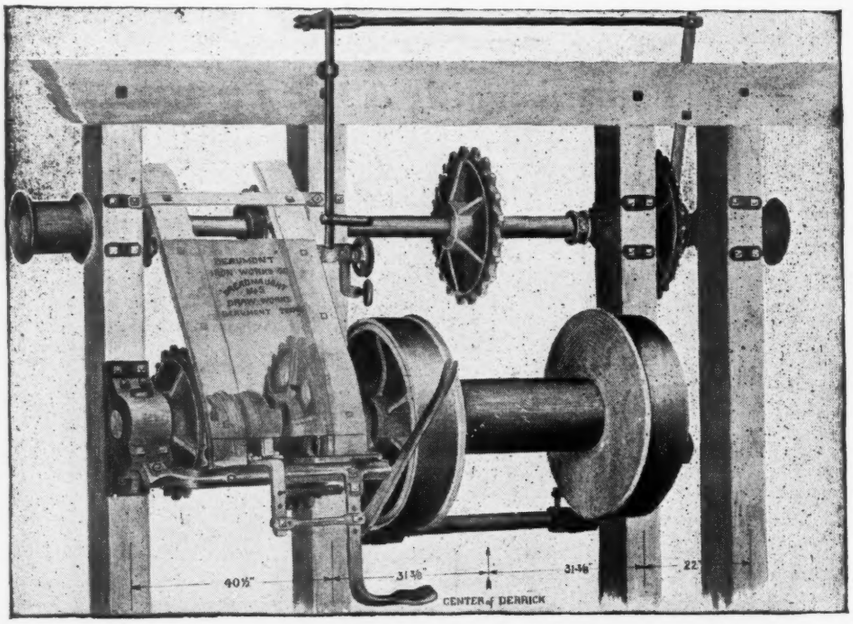

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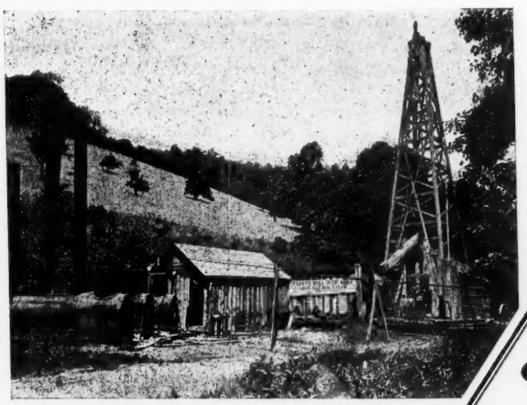

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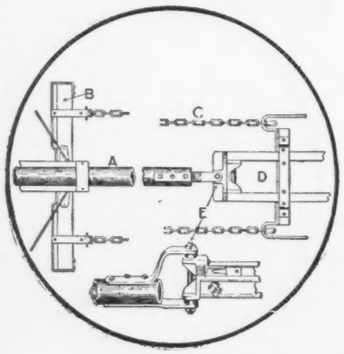

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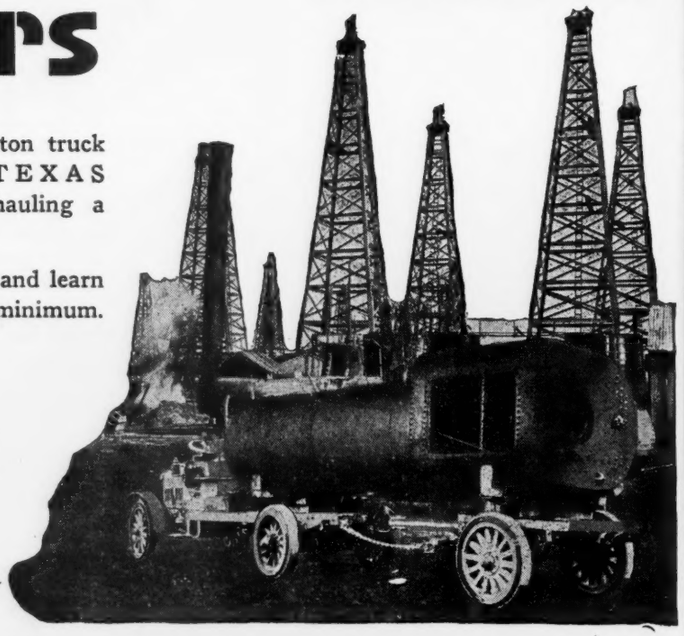

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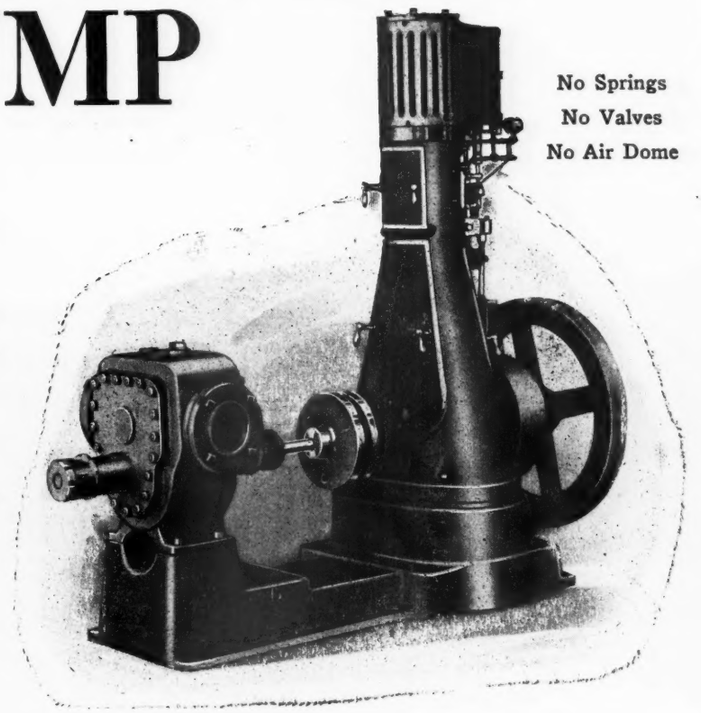

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Girten Belting & Supply Co.
F. W. Heitmann Co.
Keystone Pipe & Supply Co.
Lucey Mfg. Corporation
Oil Well Supply Co.
Peden Iron & Steel Co.
Producers Sup. & Tool Co.

Paints
Peden Iron & Steel Co.

Pipe
American Mach. & Sup. Co.
Beaumont Iron Works
A. M. Byers Co.
Harrisburg Pipe & Pipe Bending Co.
F. W. Heitmann Co.
Interstate Pipe Co.
Keystone Pipe & Supply Co.
Lucey Mfg. Corporation
Oil Well Supply Co.
Peden Iron & Steel Co.
Producers Sup. & Tool Co.
Reading Iron Co.
Walt. A. Zelnicker Sup. Co.

Pipe Grips
Norris Bros.

Pipe Derricks
Lee C. Moore & Co.

Pumps
American Mach. & Sup. Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
F. W. Heitmann Co.
Keystone Pipe & Supply Co.
Lucey Mfg. Corporation

Pumps—Continued
National Transit Pump & Machinery Co.
Oil Well Supply Co.
Peden Iron & Steel Co.
Producers Sup. & Tool Co.
Southern Eng. & Pump Co.
The Barnes Mfg. Co.
Kinney Manufacturing Co.
United Iron Works

Portable Compressors
Ingersoll-Rand Co.

Refined Products
Acme Petroleum Co.
Harvey Universal Pet. Corp.
Gulf Refining Co.
Gulf Coast Oil Jobbing Co.
Anderson & Gustafson
Humble Oil & Refining Co.
Magnolia Petroleum Co.
Standard Oil Co. of La.
Sun Co.
Texas Co.
Union Petroleum Co.
White Oil Corporation
State Refining Association
Clifford Bell Petroleum Co.
Sunshine State Oil&Ref. Co.
Hercules Petroleum Co.
James Berry's Sons Co.

Refinery Equipment
American Mach. & Sup. Co.
Briggs Weaver Mch. Co.
Chicago Bridge & Iron Co.
Kaw Boiler Works
Peden Iron & Steel Co.
Petroleum Iron Works
Tulsa Boiler & Sheet Iron Works
United Iron Works Co.
Wyatt Metal & Boiler Wks.
Walt. A. Zelnicker Sup. Co.
Sharples Specialty Co.

Refinery Sites
W. G. Burchfield & Bro.

Rig Irons
Bradford Rig & Reel Co.
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Houston Structural Steel Co.
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United Iron Works

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Standard Tank Car Co.
Wells Tank Car Desp. Line
American Car & Fdy. Co.

Tanks
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Columbian Steel Tank Co.
Keystone Pipe & Supply Co.
Maloney Tank Co.
Petroleum Iron Works
Pennsylvania Tank Car Co.
Parkersburg Rig & Reel Co.
Tulsa Boiler & Sheet Iron Works
The Heil Co.
United Iron Works Co.
Wyatt Metal & Boiler Wks.
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Texas Wagon Works

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Hughes Tool Co.
Keystone Pipe & Supply Co.
Lucey Mfg. Corporation
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Oil Well Supply Co.
Peden Iron & Steel Co.
Pelican Well Tool & Supply Co.
Producers Sup. & Tool Co.

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Williams-Koen-McManis Co.

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Guiberson Corporation

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Lucey Mfg. Corporation
Ludlow Valve Mfg. Co.
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Oil Well Supply Co.
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Southern Brass Mfg. Co.

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James B. Dunigan
F. W. Heitmann Co.
Keystone Pipe & Supply Co.
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Peden Iron & Steel Co.
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F. W. Heitmann Co.
Peden Iron & Steel Co.

Water Gauges
F. W. Heitmann Co.
Peden Iron & Steel Co.

INDEX TO ADVERTISERS

Pages

American Car & Foundry Co. 64
American Ex. Nat. Bank of Dallas.....72
Armstrong, Geo. W. & Co. 36
American Machinery & Supply Co. 67
Acme Petroleum Co. 16
Allmakes Typewriter Exchange 70
American Nat. Bank of Shreveport.....27

Bessemer Gas Eng. Co., Inside front cover
Beaumont Iron Works Co. 6
Beaumont Well Works Co. 49
Baker Casing Shoe Co. 63
Boger Oil Corporation 69
Bates & Lasky 50
Berry's Sons Co., Jas. B. 53
Burchfield & Bros., W. G. 47

Cameron-Davant Co. 50
Cleage & Co. 49
Chicago Bridge & Iron Works.....35

Darnell, Jas. L. 68
Deussen, Alexander 56
Dorsey, E. N. 50
De Soto Foundry Mch. Co. 11
Drilling Specialty Co. 50

Empire Refineries 12
Ernst & Ernst 49

Four Wheel Drive Auto Co. 9
French, S. C. 67
First National Bank of Shreveport.....25
Frick-Reid Supply Co. 30
First National Bank of Houston 65

Pages

Fort Worth Laboratories 70
Freeborn Engineering Corporation.....68
Flynn, F. L. 47
Franklin Valveless Engine Co. 6

Gould, John 67
Gaso Pump & Burner Mfg. Co. 67
Girten Belting & Supply Co. 12
Gulf Ref. Co. .....Inside back cover
Gardner Governor Co. 71
Giles & Herring 25
Gregg-Simpson 68
Gulf Coast Oil Jobbing Co. 69
General American Tank Car Corp. 3
Gulf Coast Machine & Sup. Co. 46
Guiberson Corporation 13

Heydrick Mapping Co. 67
Hughes Tool Co. ..... 8, Front cover
Hill, Brantly & McFarland 56
Humble Oil Refining Co. 69
Hopkins, Edwin B. 56
Hager & Robitaille 56
Hirsch & Hannay 49
Heitmann, F. W. & Co. 68
Harrison & Eaton 56
Harrisburg Pipe & Pipe Fittings Co....40
Harvey Crude Oil Co. 13
Hardway & Cathey 50
Heil Co., The 26

Interstate Pipe Co. 4

Kosmos Petroleum Co. 70

Pages

Keystone Pipe & Supply Co. 8
Kinney Manufacturing Co. 11

Lucey Manufacturing Corporation.....18
Landreth Machinery Co. 11

Maddox & Co. 70
Maxcy, John W. 67
Mexican Sinclair Pet. Corp. 52
Muskogee Tool Co. 41
McEvoy, J. H. & Co. 65
McWhyte Co. 33
Mattison & Block 49
Matteson, W. G. 56
Mosher Manufacturing Co. 72

National Transit Pump & Mach. Co....63
Norris Bros. 65

Oil City Iron Works 51
Okla. Tool & Supply Co. 63
Oil Well Supply Co. 7

Pittsburgh-Des Moines Steel Co. 69
Peden Iron & Steel Co. 73
Parkersburg Rig & Reel Co. 5
Pelican Well Tool & Supply Co. 25
Petty, D. E. 56
Producers Lumber Co. 67
Pioneer Trustee Co. 66
Petty, Van A. Jr. 67
Porch, Edwin L. 56
Reed Roller Bit Co. 38, 39
Ratigan, J. P. 65
Sunshine State Oil & Refining 37

Pages

Stone, Jesse R. 67
Standard Oil Company of Louisiana..10
Seguro Petroleum Co. 68
Scranton, J. P. & Co. 66
Spoonts, Marshall 70
Sullivan Machinery Co. 63
Soph Co., Edward. 27
Southern Brass Manufacturing Co. 72
Standard Tank Car Co. 47
Smith & Skinner 48
Sun Co. 72
State Ref. Ass'n 73

Texas Rig Building Co. 66
Tulsa Boiler & Sheet Iron Works 51
Tennant-Lovegrove Co. 68
The Texas Company 74
Trailer Corp. 70
Texas Wagon Works 10
Texas Supply Co. 64

United Iron Works, Inc. 54
Union Petroleum Co. .....Back cover

Valerius, M. M. & Co. 56
Vinson, Elkins & Wood 68

Williamsport Wire Rope Dist. Co. 8
Williams-Koen-McManis Co. 48
Wells Tank Car Despatch Line 67
Western Machinery Co. 23
Western Drilling Co. 70

Zelnicker Supply Co. 70

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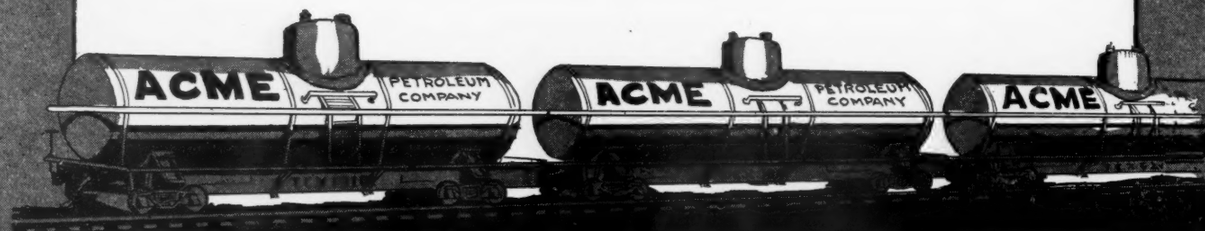

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